Price: £1.50

ST APPLICATIONS

The Magazine for Users of Atari ST, STE and TT Computers

Issue No. 12 December 1991

THIS MONTH

REVIEWS

- MultiDesk
- Hard Drives
- Ultimate Ripper
- Calligrapher Junior
- Hype!

ARTICLES

- Traps for the Wary
- ST Internals
- Proportional Print
- From the Hotline
- Cubase Part 5

REGULARS

- News
- Jeremiah's Journal
- CAD Column
- STicks and STones
- Classified Adverts
- Programmers' Forum
- Desktop Discussions
- Forum
- A-Z of the ST

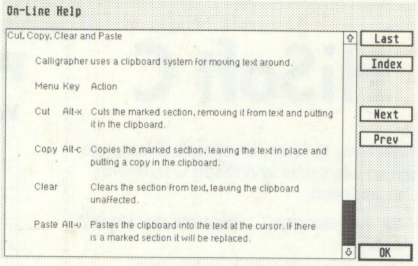
Plus PD Update

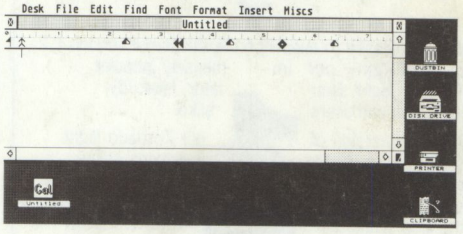
Supplement on the latest PD and Licenceware disks starts on Page 31

HARD DRIVES

Six hard drives (plus a late arrival) feature in a comparative hardware review by Piper. Those of you without this particular luxury may be surprised to learn that second mortgages are no longer a pre-requisite for treating yourself to a much more comfortable working environment.

Calligrapher Junior

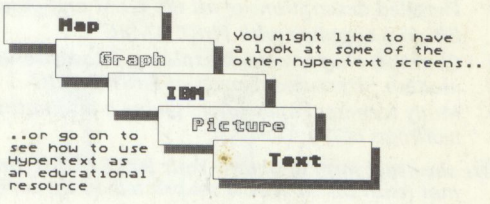

On-Line Help
Cut, Copy, Clear and Paste
Last
Index
Next
Prev
OK
Calligrapher uses a clipboard system for moving text around.
Menu Key Action
Cut Alt-x Cuts the marked section, removing it from text and putting it in the clipboard.
Copy Alt-c Copies the marked section, leaving the text in place and putting a copy in the clipboard.
Clear Clears the section from text, leaving the clipboard unaffected.
Paste Alt-v Pastes the clipboard into the text at the cursor. If there is a marked section it will be replaced.



Calligrapher Professional was reviewed by Dr. Steve Henderson in issue 4 of ST Applications. This month he takes a look at its little sibling, a somewhat cut down version called *Calligrapher Junior*, and finds that there really isn't a great deal 'junior' about it. Not only does it compare well with the 'pro' version, it also has a superior set of features to its competitors in the same price range.

HYPE!

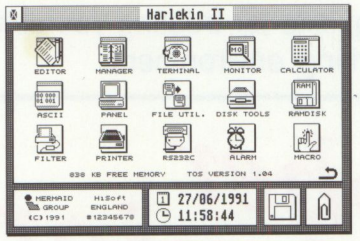
Hypermedia applications have only been available hitherto for the PC and Macintosh, but with the shareware release of Kevin Woolley's *Hype!* the first such package is now on the market for ST users. Sandra Vogel gives her verdict in this issue.


Map
Graph
IBM
Picture
Text
You might like to have a look at some of the other hypertext screens..
..or go on to see how to use Hypertext as an educational resource

HARLEKIN 2

- your dreams can come true

Harlekin 2 is a unique collection of utilities and applications for your Atari ST and TT computers. All programs are available from a single desk accessory, providing maximum convenience while taking up only one slot on the Desk menu:



- *complete editor with search and replace, block-marking with the mouse, external clipboard with cut copy and paste, full page setup options for printing, word wrap and more.*
- *extremely powerful appointment diary/calendar/ideas organiser called the Manager. This allows you to make notes of any size and assign dates, times, priorities, icons and alarms to them. Then print out your notes by day, month, year etc. for a complete time management system.*
- *dynamic printer spooler that takes just as much memory as it needs, comprehensive printer filter.*
- *full macro processor allowing keyboard shortcuts for Harlekin's modules and extensive keyboard macros, all totally under your control.*
- *communications package allowing X-Modem and Y-Modem protocols plus full modem set up and an extensive dial directory.*
- *many, many more utilities too numerous to mention in this small space, plus a 150-page, wire-bound manual.*

Harlekin 2 is available now at a price of £59.95 inclusive. Upgrades from version 1 cost £24.95; just send your master disk back to HiSoft, together with your remittance.

HighSpeed Pascal 1.13

Version 1.13 of this new, already immensely popular compiler is now available. Additional features are:

- *inline assembler*
- *help desk accessory*
- *i/o-mapped maths co-processor support*
- *faster, improved editor*
- *more compact libraries*
- *absolute-address variables*

Upgrades from earlier versions cost £7.50 inclusive, or £2.50 from version 1.1.

For those not in the know, HighSpeed Pascal comes from Denmark, is extremely fast and friendly to use and is very closely compatible to the immensely popular Turbo Pascal on the PC, even including the graphics unit from the PC.

Compilation speed is roughly 20,000 lines per minute with excellent code generation for the ST and the TT.

ProFlight 1.2

We are pleased to announce the release of version 1.2 of ProFlight, our immensely popular Tornado flight simulator, loved by reviewers and users alike.

This new version of our Tornado flight simulator includes improved colour graphics, the ability to save your cockpit set-up, a pause key, more control over the view angle and more ... it even works on the TT!

Registered users can upgrade by sending their master disk back, together with £2.50.

HiSoft C

The ideal way to learn the difficult C language is with an interpreter and HiSoft C for the ST has all you need:

- *try out your new C programs quickly and easily*
- *interactive editor with on-line help*
- *debugger with single-step*
- *extensive GEM toolbox*
- *complete manual with C tutorial*

HiSoft C is already widely used and has been well received and reviewed by its users alike.

So take the hassle out of C and learn the language everybody's talking about.

When you're ready, move up to Lattice C 5.

Your FirST BASIC

the official guide

The comprehensive reference guide and tutorial to the popular FirST BASIC package which is supplied with your new Atari ST computer.

- *Full command reference for FirST BASIC*
- *Extensive tutorial, guiding you through using BASIC from first principles. Includes many examples plus how to use GEM*
- *Detailed descriptions of all the GEM and other operating system libraries supplied with FirST BASIC*
- *Concepts chapter which explains, in easy-to-understand language, the modern, structured aspects of FirST BASIC*
- *Many technical appendices giving a fascinating insight into the workings of the Atari ST*

Use the order form to obtain Your FirST BASIC and we'll include a mouse mat (with the ST ASCII set printed on it), completely free of charge

Priority Order Form

Yes, please rush me ..... copy(ies) of

- ☐ ***Harlekin version 2 @ £59.95***
- ☐ ***HiSoft C Interpreter @ £59.95***
- ☐ ***Lattice C 5.06.02 @ £149.00***
- ☐ ***ProFlight Tornado Sim @ £39.95***
- ☐ ***HiSoft BASIC 1.3 @ £39.95***
- ☐ ***HiSoft Devpac 2.25 @ £39.95***
- ☐ ***HighSpeed Pascal 1.13 @ £99.95***
- ☐ ***Your FirST BASIC book @ £14.95***

Name: .....

Address: .....

.....

.....

Post Code: .....

☐ *I enclose a Cheque/Postal Orders*

I would like to pay by:

☐ *Access/MasterCard/EuroCard etc.*

☐ *Visa/TrustCard etc.*

Card No: .....

Expiry Date: ..... *Signature* .....

All prices include UK VAT and postage within the United Kingdom. Goods will normally be despatched within 2 working days of receiving your order. Call, write or fax for export prices. All offers subject to availability.

Please post this coupon to HiSoft at:

The Old School, Greenfield, Bedford MK45 5DE UK.
Tel: +44 525 718181, Fax: +44 515 713716

Free mouse mat with every order!

Special Offer

HiSoft
High Quality Softwar e

The Old School, Greenfield
Bedford MK45 5DE UK

Tel: 0525 718181, Fax: 0525 713716

P.S. BASIC 2 and Devpac 3 are still under development - more news next month ...

CONTENTS

Regulars

News 4
PD Update 31
Jeremiah's Journal 36
The A-Z of the ST (F-G) 39
STicks and STones 40
Forum 41
Desktop Discussions 46
Programmers' Forum 47
CAD Column 53
Classified Adverts 54
Subscriptions & Back Issues 56

Articles

Düsseldorf '91 Show Report 6
ST Internals 24
Getting to Grips with Cubase (Part 5) 27
Proportional Print Under Control 34
From the Hotline 38
Traps for the Wary Part 3 51

Reviews

Hard Reign's a-Gonna Fall 8
MultiDesk 14
Ultimate Ripper 16
Hype! 18
Calligrapher Junior 20
In the Public Domain 31

Read_Me 1st

Subscription Expired? If you received this copy of ST Applications through the post, check the first line of your address label carefully: if it reads STA12, then either your subscription has expired with this issue or you have been sent a free evaluation copy of ST Applications. Either way, you must take out a new subscription in order to receive further issues.

Information

Editor: Paul Glover
Sub-Editor: Nicky Wilson
Layout: David Smith
News Editor: Steve Delaney

Published by: The ST Club
2 Broadway
Nottingham
NG1 1PS
Tel: 0602-410241

New Address:

Mail sent to our old Stoney Street address will be forwarded and our telephone number is unchanged.

Owing to lease restrictions, we are no longer able to make retail sales from our offices. Callers by appointment only, please.

The ST Club is an independent organisation, not affiliated in any way with Atari Corporation or any other company or organisation.

Advertising

There is a limited amount of space for commercial advertising in each issue of ST Applications. Contact Nicky Wilson on 0602-410241 for further details and to request a media-pack. Subscribers can place free classified advertisements - see page 57 for details.

© The ST Club, 1991.

No part of this magazine may be reproduced without written permission of the publishers. Whilst every care is taken in the preparation of this magazine, the publishers cannot be held legally responsible for any errors.

Subscription Rates

United Kingdom:

12-issues : £15.00
12-issues plus 6 Disk Mags : £22.50

Air Mail to Europe:

12 issues : £18.00
12 issues plus six Disk Mags : £26.50

Subscription and Order form will be found on page 57.

North America

In the USA and Canada subscriptions and back issues are available from:

PDC
4320 - 196 SW Ste. B-140
Lynnwood
WA 98036 - 6721 USA
Tel: 818 242 5692; Fax: 206 348 4276

Disk Mags

These are bi-monthly compilations of the best PD software to come to our attention in the preceding couple of months - not magazines on disk. The next Disk Mag, DMG.26, will be dispatched a few days after this issue (12) is sent out.

CREDITS

Typeset with Timeworks DTP, with some help from FSP3 & PS2.
Text Preparation: Le Rédacteur3.
Final output on HP DeskJet Plus.
Printers: Wiltshire (Bristol) Ltd.

Contributors:

Mark Baines	Michael Baxter
Joe Connor	Steve Delaney
John Durst	Jon Ellis
Ofir Gal	David Harvey
Steve Henderson	William Hern
Keith Jackson	Mike Kneen
Richard Lane	Günter Minnerup
Jim O'Keeffe	Piper
Paul Rossiter	Sandra Vogel

Contributions

The articles in ST Applications are written by users for users. Everyone reading this magazine will have something to contribute; even if you do not feel able to do a full-length review or article there is the Forum section for short hints, tips and questions. If you are interested in writing for ST Applications - regularly or irregularly - please write for a copy of our terms and conditions. We always do our best to reward quality work with appropriate remuneration.

Stereo Replay Launched

Microdeal have just launched the latest addition to their Replay series of sound samplers. Replay Stereo, like its predecessors, was designed and programmed by Dave Woodhouse and Tony Racine of Luton based Audio Visual Research. It allows stereo sampling on any ST (even the pre-STE models). Samples can be output in stereo to Hi-Fi equipment connected to any ST or via the built-in connectors on the STE and TT machines.

The hardware has been totally redesigned and contains dual analogue to digital and digital to analogue convertors. These give much improved 8-bit sample quality. The user interface has been completely redesigned from that used in previous products and now features its own custom Desktop layout.

The stereo editor allows the user to load in both mono and stereo samples at 8, 12 or 16-bit resolution and convert between formats. All the calculations are done automatically by the software. In addition to all the usual and some of the more unusual editing features, Stereo Replay can perform such tasks as frequency re-sampling, sample fourier analysis, digital filtering, digital hall, room, echo, reverb and flanging effects as well as play up to 10 different samples from a Midi keyboard.

Stereo Beat, the drum machine software included, allows you to create kits of up to 15 samples with a maximum combined size of 1 Megabyte and play them back in 3D stereo (right, left and centre channels). Some impressive remixes can be achieved using this program. Stereo Beat can also control your Midi equipment.

Stereo Replay costs £89.95 and is available from most computer stores or direct from Microdeal, PO Box 68, St Austell, Cornwall, PL25 4YB, Tel: 0726 69692.

Digita Release Home Accounts 2

Following sales of over 30,000 copies of their original Home Accounts package, Digita International have announced the release of Home Accounts 2. The restrictions on number of accounts, number of transactions per account, number of standing orders, number of of budget entries and number of transaction types have all been removed. Pie charts, scatter graphs and line graphs are available with 3D effects, stacking and overlaying. With 106 printer drivers and a spooler included, you should have no problem printing them out. Also included is a pop-up calculator which can work out mortgage rate changes, loan repayments, VAT, etc. Home Accounts 2 runs on any ST with a double-sided drive and costs £54.99 but is available to existing Home Accounts users for £25.99 (including the 250-page manual). For full details contact Digita International Ltd, Black Horse House, Exmouth, Devon EX8 1JL; Tel: 0395 270273; Fax: 0395 268893.

NEWS

Eye Spy Fun School 4!

As announced in issue 9 of ST Applications, Europress Software are set to release Fun School 4. We have managed to obtain some pre-release details of the products involved. Teddy is back for the under-fives as is Freddie the Frog for the 5 to 7s, but - alas - Robbie the Robot has been replaced by Sammy the Spy. (Didn't anyone tell Europress that the Cold War is over?)

Teddy, complete with Reeboks and baseball cap, returns with six educational games based around art, maths, words, karaoke and more. Freddie the Frog, complete with skateboard, entertains the 5 to 7s with games incorporating sequences, maths, word sorting, a typing tutor and others. Sammy the Spy makes his debut for the 8 to 11 year olds with history and geography lessons from around the world as well as maths, general knowledge and timetable programs. All three releases will conform to the National Curriculum.

Double Sentry Upgraded

The accounts package Double Sentry Elite has been upgraded to v2.1d. Feedback from users indicated that two features of the program could be improved. These are detailed below.

After printing a report, you were automatically returned to the main program. The latest version of the program asks if you want to print another report before returning. This avoids the delay of having to re-load the print program for each report.

The other problem was associated with Purchase or Sales Accounts which had more than 14 unpaid or partly paid items. Previously, you were unable to see the item you wish to pay. By pressing the left arrow key, the latest version of the program will allow you to see and pay items which are dated later than those visible on the first screen.

In addition to the above, a number of minor bugs have been removed and the program has been passed by the computer division of the Customs and Excise VAT Office. Existing users should return their master disk along with £5.00 for the upgrade to Finansoft. Further details of Double Sentry Elite can be obtained by contacting FinanSoft, 45 Connaught Street, London, W2 2BB; Tel: 071 402 2836.

C++ and Prolog implementations for ST

The Free Software Foundation's GNU C++ compiler has appeared in a port for the ST. FSF software is public domain and is distributed with source code: the system consists of 5 disks of archived material, and includes GNU-C 1.37 and C++ 1.35, libraries, utilities and examples. The bad news is that the full installation requires 9MB hard disk space and 2MB memory. The disks are currently available from the German magazine ST-Computer (PD disks 438-442) for 50DM (+10DM post/package). (International phone code 010 49 61 96 481811). Available also on ST Club disks LAN.109 - 112.

The publishers of ST-Computer have also released an ST implementation of the logic programming language Prolog. Maxon Prolog is described as a fully-integrated Prolog interpreter, suitable both for standard Prolog tasks (for example, expert system building, rapid prototyping) and for building more typical ST applications, as AES, VDI, GEMDOS, BIOS and XBIOS calls are supported. Example code for a number of programs is supplied, including the source for the system's integrated development environment (which should make a translation straightforward, assuming you can cope with both Prolog and German...). The interpreter supports all the predicates defined by Clocksin and Mellish, and is benchmarked at 2500 LIPS (Logical Inferences per Second). Price is 298DM; phone number as above.

David Harvey

Shopper Show On The Move

The Spring Computer Shopper Show is to move from Alexandra Palace to Olympia and the event is to be extended from three to four days. The new location has an extra 2,000 square metres of floor space and the organisers expect the number of exhibitors to rise from 180 to around 250. The amount of visitors is expected to rise proportionately. The Spring Computer Shopper Show runs from 28th to 31st May 1992.

TOS v2 Upgrade Available Soon

TOS v2 is a cut down version of the TT's operating system (TOS v3) and is currently being shipped with the Mega STE. It is soon to be made available as an upgrade to existing STE owners. TOS v2 incorporates a number of the best features of Desktop replacement programs such as Gemini, NeoDesk, DC Desktop and KAOSDesk but with the added advantage that it is in ROM. It is unlikely that the upgrade will be made available for older machines owing to the larger amount of ROM space needed. The cost is expected to be between £40 and £50 in line with the cost of TOS 1.4 upgrades. All new STE's are expected to be fitted with the new operating system shortly after the New Year.

For the best in Educational Software

Subjects
French, Spanish
German, Italian
Science, History
Geography
English Words
Spelling
Arithmetic
Football, Sport
First Aid
General Knowledge
England, Scotland
Natural History

Kosmos are specialist producers of Educational Software designed to help you enjoy learning from your computer. Versions are available for most popular home & business computers. Many of our programs even allow you to add your own lesson material.

⇓

Write or telephone for a FREE 20-page BROCHURE of our Educational & Leisure software

Please state your computer type

Kosmos Software Ltd, FREEPOST (no stamp needed in UK)
DUNSTABLE, Beds. LU5 6BR
Telephone 05255 3942 or 5406

Access VISA KOSMOS SOFTWARE

RAMARA HOUSE SOFTWARE

ATARI ST BOOKLIST

3D Graphics Programming	Abacus 18.45
6800 Assembly Lang. Prog.	Mcgraw 21.45
Atari ST Explored	Kuma 9.75
Applications Guide in C	Compute 19.45
ST Basic Sourcebook & Tutorial	Atari 9.50
From ST Basic to C	Abacus 17.95
Game Makers Manual	Sigma 12.45
GFA Basic v3 Development + disk	Glen 17.95
Guide To Calamus DTP	19.95
Introducing ST Machine Code	ZZsoft 21.00
Learning CProg Graphics	Compute 16.45
Midi & Sound Book	M&T 16.25
Programming the 6800	Sybex 23.95
Real Time 3D graphics AtariST	sigma 17.55
STProgrammersGuideST	Basic/Logo 22.45
ST Machine Language	Abacus 16.10
The Elementary AtariST	Compute 16.95
Tech' Reference Guide vol 1	Compute 19.45
Tech' Reference Guide vol 2	Compute 19.45
Tech' Reference Guide vol 3	Compute 22.45
Tricks & Tips on the ST	Abacus 16.40
Your FirST BASIC	Bookmark 14.45
Your Second Manual to the ST	10.95

MISC ITEMS

DAATAscan Pro. AT25 3 Dither - Modes 100-400 dpi 64 grey scales	**169.95**
Cameron Handy Scanner 3 scan - modes 200-400 dpi 16 grey tones	**110.95**
Golden Image Hand Scanner 3 grey - modes 200-400dpi Touch Up s/w	**179.99**
VidiST video frame Grabber-Rombo	86.95
Vidi Chrome Colour Upgrade	19.50
ATonce PC286 Emulator V5	**169.95**
AT SPEED C16 16 Mhz PC Emulator - DR DOS 5.0 Included	**229.95**
External SM2400 Modem	**244.95**
Twin joystick/mouse lead	**5.95**
Naksha mouse 280 dpi	**27.95**
That's a mouse 290 dpi Compo	**21.95**

ATARI ST PROGRAMS

Accountant v3	Sage 127.95
Accountant Plus	Sage 224.95
Astrology Program	Antic 9.99
Adimens plus v3 Database	Kuma 98.99
Bookkeeper v3.2	Sage 85.95
Canvas	12.99
Cashbook Combo	Digita 63.95
Cyber Control	36.95
Cyber Dev/Design	Disks 16.95
Cyber Paint	44.45
Cyber Sculpt	46.95
Cyber Studio	46.95
Cyber Texture	46.95
Data Manager Prof	**34.55**
Degas Elite	21.95
Delux Paint	45.95
Devpac v2 Hisoft	45.99
EGCalc Spreadsheet	Digita 31.95
Easy Draw 2	38.95
Easy Text Plus DTP	ZZsoft 19.95
First Word+New v3.2	**57.45**
First Word V3.2 Special offer - with Golden Image Mouse, C/W Mouse Pad & Holder only	**63.95**
Fun School 3 all ages	18.95
GFA Basic V3.6 Interpreter	38.95
GFA Compiler v3.6	23.95
GFA Draft Plus V3.13	**83.95**
GFA Gem Utility	23.95
GFA G Shell	16.95
GFA Mission Control	23.95
Harlekin Hisoft	36.95
Hisoft C Interpreter	38.95
Hisoft Forth	31.99
Home Accounts	Digita 23.95
IMPrint 9/24 Pin Mono	10.95
IMPrint 9/24 Pin Colour	15.95
K-Data	Kuma 42.95
K-Resource 2	Kuma 33.95
K-Roget Thesaurus	36.75
D-Spread 3	Kuma 64.45
K-Spread 4	Kuma 88.95
K-Spread 4T	128.00
Knife ST	Hisoft 23.75
Lattice C v5	Hisoft 119.99
Masterplan Spreadsheet Special	56.56
Master Sound 2	33.95
Megapaint II	81.95
NeoDesk 3	**28.55**
Pagestream New Version 2	Phone
Personal Finance Man. Plus	31.96
High Speed Pascal	Hisoft 79.96
Prodata	Arnor **60.18**
Proflight	Hisoft 31.96
Protext v5	Arnor 108.95
Quartet Microdeal	39.95
Replay 8 Microdeal	65.95
Sequencer 1 Gajits	72.95

ATARI ST PROGRAMS

Spectrum 512	27.95
Superbase Personal Database	19.95
Superbase Personal 2 Database	69.95
Superbase Professional Database	172.95
System 3 Small Bus. Accounts	47.45
System 3 Extended	Digita 63.95
Tempus 2	Hisoft 29.95
Thats Write	Compro 84.95
Timeworks Publisher ST New v2 - Shipping 27/10/91	**109.95**
Werks	Hisoft 21.45
Wordfair	Hisoft New 65.25
Word Perfect	179.95
Word Writer	Timeworks 39.95
Write On	Compro 44.95

MOST ITEMS ARE DESPATCHED WITHIN 24 HRS FOLLOWING RECEIPT OF ORDER.

ATARI ST MACHINES

520STE Turbo Pack	309.95
520 STE Discovery Pack	309.99
1040 STE Family Curric	369.95
Atari Lynx + Power Supply + Game - Electrocop (limited Offer)	99.95
Portfolio Pocket PC	178.95
Mega 1ST Pro 24 Pack	439.95
Mega 2 ST Pro 24 Pack	625.00
Mega 4 ST Pro 24 Pack	789.00

MONITORS

Atari SC1224 Colour Monitor	273.95
Atari SM 124 Mono	Phone
Philips CM8833 II Colour + Lead	254.95
Monitor cable ST to scart	9.99

PRINTERS & ACC

Citizen 120D Plus inc lead	149.95
Citizen 124D inc lead	209.95
Citizen Swift 9 Pin inc lead	204.95
Citizen Swift 24 Pin inc lead	306.95
Citizen Swift 24X Wide Carriage	405.95
Colour Upgrade Swift 9/24	38.95
Ribbon for LC10 (min 2)	2.99

DRIVES

Cumana 3.5 1 Meg CSA354	79.95
External 3.5 1 Meg Inc PSU	64.95
Golden Image 3.5 1 Meg	75.95
Megafile 30 Hard Drive	Atari 349.00
Megafile 60 Hard Drive	Atari 465.00

3.5 DISKS

Sony branded 2DD box (10)	9.95
Sony branded 2HD box (10)	15.95
Sony/Memorex unbranded (10)	6.50
Sony Unbranded box (50)	28.50

All prices include VAT. Carriage FREE UK & BFPO: EEC Add £6 Air Mail
Please send Cheque/PO made payable to:
RHS, Ramara House,
402 Wakefield Road, Dalton, Huddersfield
Telephone Sales 0484 425843
Hours of business 10am-7pm Monday-Saturday

VISA Access

RECREATION SOFTWARE

20% OFF ANY GAME SOFTWARE
PLUS QUICK FREE DELIVERY UK:

PRICES SUBJECT TO CHANGE

Z-80 CROSS ASSEMBLER

Z 80

A fully integrated GEM - based development system for the ATARI ST

Full screen editor, macro assembler, linker, and RS232 comms facilities to download Intel Hex or object code.

£ 49.95 incl VAT incl P&P

❖ Comprehensive manual

This fast, 2-pass, assembler accepts the full range of directives & commands. It features conditional assembly, source file inclusion, and supports extensive error reporting. It produces executable code, linkable code, or Intel Hex.

❖ Full installation details

There is also a stand-alone .TTP command line version that allows assembly of source code modules directly from the GEM desktop or from a MAKE utility such as our MAKEST (£19.95)

❖ Source code examples

The RS232 Comms is fully configurable and can initialise external devices (EPROM programmers) by the use of command strings

ATARI ST

tel: 0908-615104

D&S Software PO Box 908, Newport Pagnell, MK16 8YJ

Bit Image to Vector Graphics

Improve the quality of your DTP output!
Convert all your favourite bit image files to vector graphic files quickly and at low cost.
Send 9" x 4" s.a.e. for full details:
TopDraw Productions
PO Box 322
Thornton Heath, Surrey, CR7 7ZQ

PROFESSIONALLY DESIGNED CLIP ART

ARTICO GRAPHIC DESIGN

TELEPHONE 0203 – 347014

1. People & Sports
2. Catering Logos & Borders
3. Borders, Flashes & Arrows
4. Symbols
5. Magic
6. Music – Logos, Notes & Borders
7. Christmas Designs

£3.50 per disk including catalogue & p+p

Disk Size – 3.5" Double Sided
Format – IMG or PCX (please state when ordering)
Send SAE for further details

Cheques or Postal Orders made payable to
Artico:– 136 Oakdene Crescent, Nuneaton CV10 0DT

Atari Düsseldorf '91

Show Report - - through another pair of eyes

In last month's issue Britt Johnston gave readers a report on some aspects of this year's Düsseldorf show. This month Joe Connor presents another view of the event, covering items not mentioned last time round.

The Atari Messe in Düsseldorf lasts three days and is in many respects a mirror image of UK shows. Floor space is at least 4 times the size of the main hall at Alexandra Palace. Games software stands and market trader stands were hard to find. Most stands were occupied by firms who actually produce and sell ST/TT software.

My visit on the second day was simply not long enough to cover all the stands in detail so the following report reflects my contented meanderings in Atari heaven.

I wandered past the Gadgets by Small stand and heard Dave Small extolling the virtues of their Megatalk board ($299+$40 Shipping) which plugs into the expansion port on Mega STs. Two Serial ports and a true SCSI port are provided. Mega STs equipped with Megatalk can communicate using the serial ports at very high speed (the amount of data on a 720K disk can be transferred in 8 seconds)! Used with Spectre, Mac peripherals such as the Laserwriter, modems, fax cards and networks can also plug in and go. Mac SCSI devices work perfectly using the SCSI port, overcoming in hardware what Spectre tries to achieve in software via the Atari ACSI(DMA) port. The 68030 SST accelerator/memory expansion board was also on display.

Nearby I chatted with another American, Charles F Johnson of Codehead Software, about possible enhancements for CodeKeys (see my review in Issue 10). It was a pleasure to meet the people who create these products and realise they really are human, not just names in an Info box.

Trade iT, the company best known in the UK for Avant Vektor and Repro Studio, had a large stand demonstrating a beta test version of Colour Repro Studio 2, the Genus font editor and Avant Plot which was in action driving an industrial roller cutter/plotter (£13,000) cutting out vinyl signs from a 2 metre wide roll. A new DTP product, IMPRINT 2000 was launched; although IMPRINT will inevitably be compared with Calamus, Trade iT see the product as ideally suited for use in Print rooms where its page layout approach, akin to moving transparencies around on a light box, will be fully exploited. Full-colour page layouts were being output to a colour PostScript printer. By coincidence I bumped into Roger Davies of System Solutions who asked me to point out that all Trade iT products and Codehead products are available from them in the UK! I seriously began to wonder where all the Germans were.

I managed to find some on the Victor software stand giving out Demo versions of 1st Base (£98), a relational database which can run as a program or accessory. An optimistic enquiry for an English version resulted in a disk from under the counter being thrust into my hand almost immediately, and mutters about "die fatale deutsche Tüchtigkeit" (...German efficiency) ensued. An added benefit is you get to see what I am talking about. Extensive Import/Export options are provided, and even Portfolio owners catered for. See below.

ST/TTs running A3 screens were a common sight on most stands, often displaying the Mac like font which is the NVDI default screen font (see CAD Column issue 10).

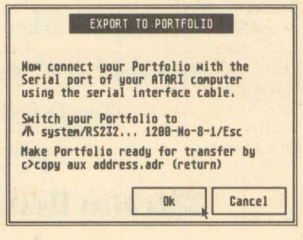
Computer Technik Kieckbusch market an unusual piece of software called STEVE (an English version is available). STEVE (ST EVEnt editor) offers a flexible combination of database, text editor, graphics library and DTP facilities. Combining these options together enables Computer aided instruction modules to be easily produced.

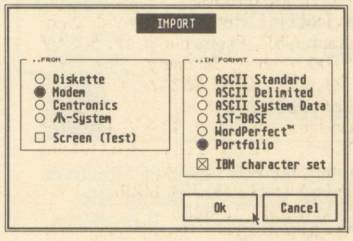
Customising the ST/TT is flavour of the month, no doubt catering for the market created by the TT 'power without the tower' casing. Unfortunately, the available options are fairly expensive:

Eickmann Computer Tower - available with either ST/TT built in;

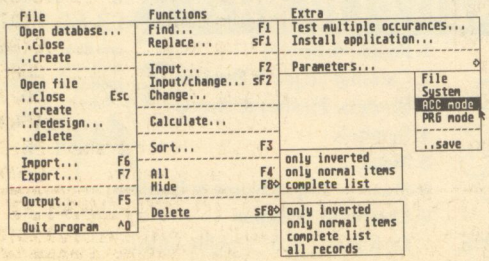
Tetra ManHatten Tower - stylish, loads of options and available with ST/TT built in or as a DIY package;

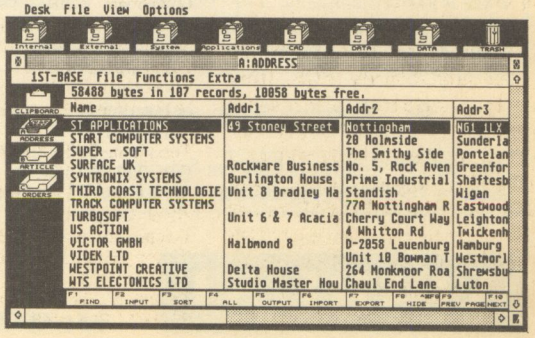
Foxware Foxbox (998 DM) - extremely ugly but clever casing which sits over the TT providing space for added extras by increasing the height; the wood grain


EXPORT TO PORTFOLIO
How connect your Portfolio with the Serial port of your ATARI computer using the serial interface cable.
Switch your Portfolio to
/\ system/RS232... 1200-No-8-1/Esc
Make Portfolio ready for transfer by
c>copy aux address.adr (return)
Ok
Cancel



1st Base is a fast relational database which runs on all ST/TT models in medium or high resolution. Features include: integrated calculation functions, BASIC-like programming language (ideal for Report generation), clipboard, in-built terminal program, 3-level sort and very flexible Import/Export options.





effect was not my favourite option.

RTS Electronik were offering a more affordable custom option. Replacement key caps (from 99 DM) and Key Click spring sets which improve the feel of non-Mega ST keyboards. (Atari Workshop will be importing these.) Any combination of red, green, yellow, orange, beige, grey, black and white keys can be selected and the customised keyboard looks very striking.

Hardware modifications are a German speciality and many of them are already available in the UK. A few I hadn't seen before were:

Roskothen und Eckstein GbR - 2.5 inch 42Mb hard disk kit (1550 DM); I was impressed to see this built in and running on a 1040 ST but it seems to have escaped their notice that you could upgrade to a secondhand Mega ST and build in a 3.5 inch mechanism for a similar price!

Friedhelm Heyer & David Neumann GbR; 16MHz accelerator card (366 DM). This affordable card has a 16Kb cache and distinguishes itself by the addition of a 16Mhz 68881 coprocessor socket and makes the usual compatibility claims. The card looks a bit large compared to its rivals, approx 140 x 80 mm.

OverScan GbR; offer a pot pourri of ST/TT hacks. Overscan removes the wasted black border around the screen display using a hardware hack and the new TT version (299 DM) increases resolutions between 61% (ST low) and 34% (TT low and med). Rumour has it that Atari US technicians said it was impossible to make the TT overscan, so the OverScan engineers did it anyway!

A SM 124 emulator (99 DM) for the TT makes it possible to use ST programs at a simulated 640 x 400 resolution on A3 large screen monitors (the MGE and Matrix graphic cards provide a similar SM124 emulation for their large screen ST users). It amused me to think of a TT/A3 monitor emulating an ST/SM124.

MARKO CDE; were displaying their Turbo 16, 20 and 030 accelerator boards. EOS, (formerly KAOS) an alternative operating system to TOS is available with these boards and as a stand alone upgrade which piggy backs onto the 68000 CPU rather than replacing the existing TOS chips. NVDI loves EOS and claims that TOS acts as a brakeshoe!

A new accelerator based on a 68000 running at 24MHz was demonstrated, overcoming the usual 16MHz limit. This should make the board very softare compatible. DynaCADD users (is there anything else which uses the 68881/2?) could hook this up with a new maths coprocessor upgrade, which also runs at 24MHz, and fits directly onto any 68000 CPU for even faster performance.

TKR; offer a VME slot version of their Crazy Dots graphic card (1498 DM) for the Mega STE and TT together with the original product available for the Mega ST expansion slot. Maximum resolution is 1664 x 1200 pixel with 256 colours from a palette of 262144. AT Speed and ATonce PC emulator users can even take advantage of the on board VGA chip. News that the MGE II card is no longer available should improve the prospects of this board becoming available in the UK.

Contacts:

CodeHead & Trade iT products; System Solutions, Windsor Business Centre, Vansittart Estate, Windsor, Berks, SL4 1SE.
Telephone: 0753 832212
Fax: 0753 830344

Computer Technik Kieckbusch; c/o Expressworks Ltd, Vyne Cottage, 75 Heath Lane, Upper Hale, Farnham, Surrey, GU9 0PX.
Telephone: 0252 726255
Fax: 0252 727125

Eickmann Computer, In der Römerstadt 249/253, 6000 Frankfurt 90, Germany.
Telephone: 069 763409
Fax: 069 7681971

Foxware Computer GmbH, Grundstr. 63, 5600 Wuppertal 22, Germany.
Telephone: 0202 640389
Fax: 0202 646563

Friedhelm Heyer & David Neumann GbR, Promenadenstr. 50, W 5100 Aachen, Germany.
Telephone: 0241 35247
Fax: 0241 35246

Gadgets by Small, 40 W. Littleton Blvd, #210-211, Littleton, Colorado 80120, USA.
Telephone: (303) 791-6098
Fax: (303) 791-0253

MARKO CDE, Schillerring 19, 8751 Großwallstadt. Try Atari Workshop, 19 Sumner Workshops, 80 Sumner Rd, London, SE15 6LA.
Telephone: 071 708 5755
Fax: 071 708 5754.

OverScan GbR, Säntisstr. 166, 1000 Berlin 48, Germany.
Telephone: 030 721 9466
Fax: 030 721 5692

Roskothen und Eckstein GbR, Monheimsallee 85, 5100 Aachen, Germany.
Telephone 0241 28840
Fax: 0241 28842.

TKR GmbH, Projensdorfer Str. 14, 2300 Kiel, Germany.
Telephone: 0431 337881

Victor GmbH, Halbmond 8, D 2058 Lauenburg, Germany.
Telephone: 04153 52323
Fax: 04153 51048

Cambridge Business Software

ATARI ST SOFTWARE

ACCOUNTS

Small Business Accounts Cash	£69.95
Small Business Accounts Extra	£99.00
Cashbook Controller	£39.95
Final Accounts	£24.95
Cashbook Combo Pack	£59.95
System 3 (Inv/Stock)	£39.95
Home Accounts 2	PHONE
Sage Cash Trader	£79.95
Wages ST	£89.00
Personal Accounts Plus	£26.90
Personal Finance Manager Plus	£34.95

DATABASES

Adimens Plus	£99.00
Data Manager Professional	£29.95
Superbase Personal 2 (v3.02)	£69.95
Super Base Professional (v3.02)	£175.00
Digita DGBase	£39.95
Prodata	£59.95

DESKTOP PUBLISHING

Timeworks DTP	£69.95
Calligrapher Junior	£69.00
Pagestream v2	PHONE
Fleet Street Publisher v3	£159.00
Calamus	£250.00
O-Line Art	£159.95

COMPUTER AIDED DESIGN

PC Board Designer	£135.00
BeckerCAD	£99.00
Megapaint II	£79.95
Megapaint II Professional	£199.00
GFA Draft Plus v3.13	£79.95
CAD 3D v1.0	£18.95
CAD 3D v2 (Cyber Studio)	£39.95
Cyber Control	£32.95
Cyber Paint V2	£39.95
Cyber Sculpt	£59.95
Cyber Texture	£39.95
Architectural Design Disc	£17.00
Easy Draw 2	£39.95
Supercharged Easy Draw 2	£59.95

MUSIC

NEW C-LAB Creator v3.1	£269.00
NEW C-LAB Notator v3.1	£429.00
Creator/Notator Upgrade	£239.00
C-LAB Notator Alpha	£179.95
C-LAB Aura	£89.00
C-LAB Midia	£59.95
C-LAB v.3 upgrade	£37.95
Cubeat	£239.00
Cubase	£459.00
Sequencer 1	£79.95

LANGUAGES & COMPILERS

Mark Williams C v3	£89.00
Mark Williams C Source Debug	£42.00
Prospero C	£75.00
Prospero Fortran	£75.00
Prospero Pascal	£75.00
Prospero Toolkit	£55.95
Hisoft Lattice C v5	£115.00
Hisoft High Speed Pascal	£89.95
Hisoft C. Interpreter	£49.95
Hisoft Devpac v2.22	£45.00
Hisoft Devpac TT	£119.00
Hisoft Power Basic	£39.95
Hisoft Basic	£59.95
Hisoft Nevada Cobol (With CP/M)	£42.00
FTL Modula 2	£52.00
FTL Modula 2 Developer	£69.95
FTL Toolkit	£49.95
GFA Basic Interpreter v3.6	£45.00
GFA Basic Compiler v3.6	£24.95
Nevada Cobol (with C/PM)	£42.00
MPE Forth 83 (GEM)	£44.00
Minix v1.5	£149.95

SPREADSHEETS

K-Spread 3	£67.95
K-Spread 4	£89.00
NEW 3D Calc	£34.95
Logistix v1.2	£79.95
Hyperchart by Atari	£95.00
LDW Power Spreadsheet	£99.00
Digicalc	£29.95

WORD PROCESSORS

Thats Write	£85.00
Write On	£45.00
GST First Word Plus v3.2	£57.95
Protext v5	£109.00
Protext v4.2	£69.95
Wordperfect v4.1	£179.95
Timeworks Wordwriter	£39.95
Wordflair	£65.00

MISCELLANEOUS

NEW AT Speed C16 PC Emulator	£229.00
PC Speed	£99.00
SLM 804 Replacement Drum	£169.95
SLM 804 Toner Cartridge	£39.95
SLM 804 Epson Emulator	£24.90
Neodesk v3 (UK)	£29.95
Deluxe Paint	£59.95
Hyperpaint v2	£29.95
Hyperdraw	£29.95
Degas Elite	£19.95
Harlekin	£39.95
Turbo ST v1.8	£29.95

No surcharges on European orders!
Many other titles in stock.

Phone 0763 262582 *NOW!*

HARD DRIVES

protar

FAST, HIGH-SPEC, HARD DRIVES FOR ALL STs

NEW LOW PRICES!

- FAST ACCESS TIME
- EXTERNAL DEVICE NO. SWITCH
- DMA THROUGH PORT
- UP TO 12 PARTITIONS
- AUTO BOOT/PARK
- EXCELLENT GRAPHICS-BASED SOFTWARE
- 12 MONTH INSTANT REPLACEMENT WARRANTY

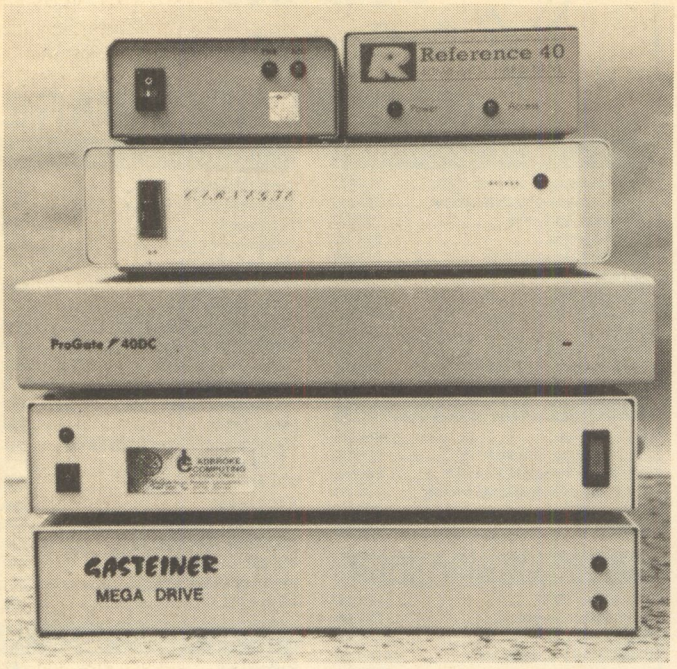
Progate 20Mb	£279.00
Progate 30Mb	£326.00
Progate 40Mb	£340.00
Progate 40DC	£423.00
Progate 60Mb	£437.00
Progate 80Mb	£486.00
Progate 80DC	£565.00
Progate 160Mb DC	£922.00
Progate 440Mb	£1589.00
Progate R44 removable	£610.00
T60 Tape Streamer	£580.00

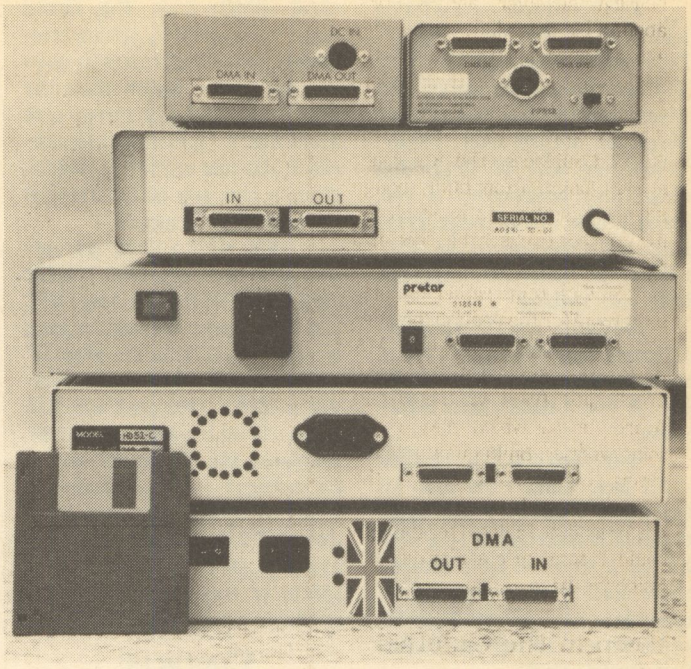
24-HOUR ORDER LINE (0763) 263127
MODEM USERS — CALL OUR BULLETIN BOARD ON 0763 261624
All prices include VAT & delivery. Make cheques payable to Cambridge Business Software.

Melbourn Science Park, Cambridge Road, Melbourn, Royston, Herts. SG8 6EJ

IMMEDIATE DESPATCH (subject to availability)
ORDERS WELCOME FROM EDUCATION, GOVT. & TVEI
HOW TO ORDER:
TEL 0763 262582 • FAX 0763 262425 • TELEX 817932

VISA





Hard Reign's a-Gonna Fall

Piper has been trying to make up his mind which hard drive to buy and has been pestering suppliers, asking for 'review' copies of their machines - or at least that was his story. In order to keep things straight and above board, we have agreed to present his findings in ST Applications...

Hard discs are probably the first luxury item that an ST user lusts after. They're a luxury because they don't actually do anything that the ST can't do already, but they do make life so much easier.

In simplified terms (the only kind I can understand) a hard disc is just a grown up floppy. It stores more data, it can get to it more quickly, and it sits around a lot and hums. In use, though, it transforms the way you do things. Not always for the better, but irretrievably different.

When hard discs for the ST first arrived on the scene, they were very much speciality items, big, noisy, heavy and costing two major organ donations in a little hospital in Greece. Nowadays they are coming down to price levels at least in the same tax bracket as PC drives. Have they arrived as a utility item for the average user?

Collected here are examples from Ladbrooke, protar, Gasteiner, Power, Evesham and Hunter (a late addition from Scotland), representing most of the ranges on the market. The approaches vary slightly, but the basic aim of all of them is to deliver high capacity and speed of access at an affordable price. Onwards.

Let's Get Physical

The size of these brutes can be important if you have limited desk space. As you can see from Table 1, the Reference has the smallest footprint (by a whisker - if feet have whiskers) by virtue of the fact that the power supply is in a separate box which can be situated anything up to 1.75 metres away. The Series 900 has the same design, but the power supply has a lead only 1 metre long, giving you little to play with once you take desk height into consideration. You also have to take into account the fact that the others are all big and rugged enough for you to plonk a monitor on.

The Carnegie is the odd one out of the bunch, since it's a lot smaller than the mainstream drives, but much larger than the mini drives. For me, this was kind of like the three bears; some are too big, some are too small, this one was just right. It's the right size for a standard monitor, no bigger. There's no "better" or "worse" with size, it's down to you.

Build is another matter. The ProGate is immaculately put together, definitely the sleekest of the bunch. It really looks the business, and feels that way too. I'd have no compunction about putting a 17" or 19" monitor on it. Very reassuring. The attention to detail is shown by the way that the power socket on the drive has a small, removable box below it containing the fuse for the unit, plus a spare, and the power cable that comes with it has a moulded plug already fitted. The Reference and the Carnegie were the only other drives to come with a plug. After paying several hundred pounds for something, I want to be able to plug in and go, not wait until the nearest electrical shop is open.

The one small slip-up of the ProGate was that the DMA ports are marked in German.

The Data Pulse, by comparison, looked a bit cheap, a standard "Boxes 'r' Us" casing with a silver "Ladbrooke Computing" sticker on it and no labels for the DMA ports. You had to consult the manual to find out which port was which.

The box of the Mega Drive seemed like it was from the same supplier, but had the name printed on the box and labels for the DMA ports, as well as extra vents in the side. The DMA ports were not

particularly secure in their housing, however, and wobbled about a bit with all the connecting and reconnecting I was doing in the testing. It also lacked the Data Pulse's rubber feet, resting directly on its screws, not nice for polished surfaces. The Reference at least looks custom built, though it's not something to bung on the mantelpiece to cheer the place up a bit, and the 900 seems rugged enough with some rather fetching patterning for the vents in the side.

On the Carnegie, the DMA ports aren't secured to the casing at all, just fixed to the circuit board inside, which may cause some worries. Build quality of the casing is good, however. It is the only drive without a removable power lead, so falling over the lead could do some spectacular damage inside the drive.

Even in the Quietest Moments

Noise in a hard drive is relative. What's perfectly acceptable and even unnoticeable with the stereo on and people wandering about turns into an embarrassing cacophony at one in the morning with not a proverbial creature stirring. None of the units had unacceptable noise levels, but they were different.

The Data Pulse had the distinct advantage of not having a fan, so the noise was from the drive alone, making it the quietest on test, though not silent.

The 900 (again without fan) was next in line, with the ProGate and the Carnegie (even with fans) just a little way behind it.

The Reference was surprisingly noisy. You'd think a dinky liddle box like that would hardly be noticeable, but the fan and drive in such a small area definitely make themselves known. Turning off causes a very definite "Clunk", presumably while the heads auto-park themselves, and the drive access sounds like someone pretending to make filter coffee.

The Mega Drive shared the blessing of no fan, but used an old Seagate drive, making it slightly noisier than the Reference, particularly when there was some disc accessing to be done.

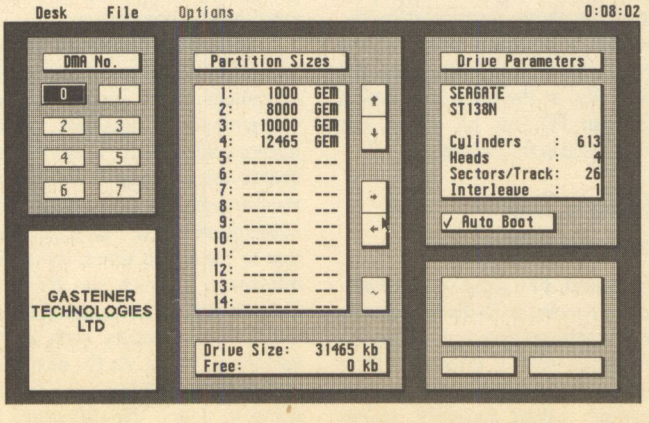
Some Like it Hot

Connected to the fan noise is the heat generated. The ProGate and Reference with their fans were able to run for hours and maintain their cool. The Data Pulse and the 900 got slightly warm on certain bits of the box, but nothing to worry about and the Mega Drive and Carnegie were getting distinctly fevered, reaching the point where I was slightly concerned for their well-being, but not so concerned that I switched off. On the hottest day of the year, I'd be uncomfortable running these for long periods, but they should be fine under normal conditions.

The Carnegie, with its sealed box design doesn't seem to benefit much from its fan, since it has no vents through which air can flow. Just for laughs, I took the top off to give it a bit of air, and it was able to run cool for hours. Hunter say that the box is currently being redesigned with vents, though the Rodime drives they use are guaranteed up to 50 degrees C.

Back to the Features

There aren't that many features that a hard drive can have. Of these few, one of the most useful is the provision of a DMA output, allowing you to connect more than one device to the DMA port of the ST. Another Good Idea is to have auto-parking, a facility whereby the heads are moved away from the disc's data area when the power is turned off, making it much safer to transport. All these drives have these facilities.



The Gasteiner interface, wiv all yer basic functions, guv.

Who needs it?

You do. Even if you "only" play games, a hard disc can really improve your life. Games like "War in Middle Earth" which involve more disc swapping than Radio One become almost playable. Wonderland and the forthcoming Populous 2 are other examples of what might be a future trend. And there's always somewhere to save a game.

For seriouser applications, the hard drive is wonderful. DTP packages actually have all the facilities available at once, relational databases can quickly work out who they're related to. Even something as simple as booting up is made so much easier, all your accessories and auto programs can be in the same place, switched on or off as desired.

What do you do when you finally finish editing the 2-minute stereo sample of your dreams? With floppies, you probably cry a lot and vow never to turn the machine off, since the sample length runs to 2.5MB. With a hard disc, you just save it.

And the more people there are who have a hard disc, the more the big companies will take the ST seriously.

Drawbacks

The one thing that everybody who has a hard disc should do is make a backup every time they finish a session where they've saved important data to disc. And the one thing no-one likes doing with their hard disc is backing it up (well, actually, that's not the only thing, but it wouldn't have sounded as good any other way).

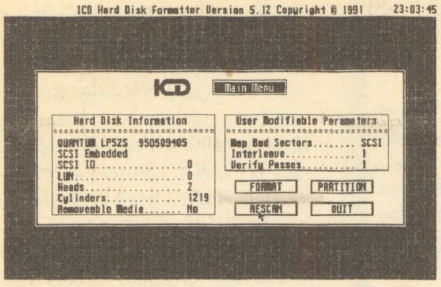
There is backup software around in PD, Turtle and Vault are just two examples. It won't make backups pleasant, but it will make them easier. And far preferable to losing everything if the hard disc ever goes wrong.

The Data Pulse scores heavily for a few reasons. Firstly, in common with the 900 and Carnegie, it has a clock on board, keeping the date and time correct even when the drive is switched off. Secondly, it has a DMA device selector. Author takes deep breath for explanation.

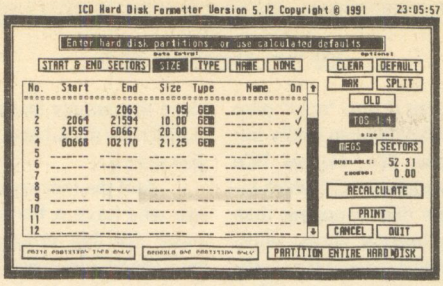
The DMA device selector, which also features on the ProGate, allows you to select which device number the unit is. Each device you connect to the DMA has to have a different number in order for you to talk to it separately. Put two device 0's on the DMA and you're likely to be made very unhappy. The selector not only means that you can connect things such as the Atari Laser printer to the DMA, but also that the hard drive isn't a complete loss in three years' time when you decide you need more room. All you need do is give each device a different number, and you can carry on using the drive in your new set-up. Thirdly, the Data Pulse has this switch and its power switch on the front where you can get at them. There is a school of thought that states that these buttons are dangerous and should be hidden away from the easy access of prowling felines or low-flying crockery (trust me on this one). Personally, I prefer to be able to get at my bits without having to disembowel the entire room.

The Carnegie has no switch for changing the device number, but the number can be changed if you open up the casing by slotting a connector over a couple of pins - reasonably straightforward. Hunter say that, if done properly and with their permission, this will not invalidate your warranty - though if you open up the drive and skewer it, they won't be held responsible. It shares the positioning of the on/off switch at the front, though it has no on/off light.

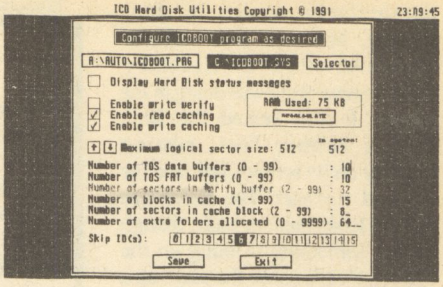
A feature which only the 900 has is a switch for physically write protecting the entire hard drive. It acts rather like the write protect tab on a floppy, except for the fact that the hard drives use disc caches to store directory information, so if you were to try saving to disc with write protect on, then removed the write protection and tried again, the disc cache would think you'd already saved and write garbage to the drive. You'd have to turn the drive off and on again without the write protect. I can't think that I'd want to use it, but it's there in case I ever change my mind.



All you ever wanted to know about your drive.



Once formatted, you can start partitioning.


ICD Hard Disk Utilities Copyright © 1991 23:09:45
Configure ICDBOOT program as desired
A:\AUTO\ICDBOOT.PRG
C:\ICDBOOT.SYS
Selector
Display Hard Disk status messages
Enable write verify
Enable read caching
Enable write caching
RAM Used: 75 KB
Maximum logical sector size: 512
Number of TOS data buffers (0 - 99) : 10
Number of TOS FAT buffers (0 - 99) : 10
Number of sectors in Verify buffer (2 - 99) : 32
Number of blocks in cache (1 - 99) : 15
Number of sectors in cache block (2 - 99) : 8
Number of extra folders allocated (0 - 9999): 64
Skip ID(s):
Save
Exit

The options you can set with the ICD utility program.

The ICD drive software

Killing me Softly

The Reference, Carnegie, Data Pulse and the 900 come with ICD software, the ProGate and Mega Drive with own brand software.

In terms of power, the ICD is superior in a number of ways. Partitions can be partially rebuilt without without formatting the drive, the DMA port can be tested to see what hardware is attached, logical drives can be swapped. But in terms of usability, the ProGate software is streets ahead, showing things graphically and having all facilities in one program rather than the ICD method of having a specialist program for each task. The ProGate software even tells you how long it's going to take to format a particular drive.

The Mega Drive software, GE Soft, was by no means hard to use and did the job quite adequately, but it lacked the power and flexibility of the other packages.

If I absolutely had to choose between the ProGate and ICD, I'd probably go for the ICD, but I'd do it very sadly. With both available, I've tended to use the ProGate software whenever possible, but sometimes had to go to the ICD for a particular function. The RateHD program used in the speed tests, for example, came with the ICD package. There's really not much in it, but the ProGate interface is definitely the way I hope future versions of hard disc software go. A pleasure to use.

In all sets, all the usual stuff is there - formatting the disc, partitioning, zeroing a partition, setting autoboot. protar also allow you to select which drive to boot from when you turn on, dead useful if you've got more than one drive connected up and one of them doesn't have a DMA device selector.

The Data Pulse also comes with a demo version of NeoDesk (nice touch, guys) and demo versions of Ladbrooke's Midistudio Master and Midistudio Junior, as well as the Turtle backup software, which also features on the Mega Drive disc. Now, although Turtle isn't my favourite backup software, it's a damn sight better than what you get from Power, Hunter, protar and Evesham, which is bugger all. Big oversight.

But better than all of that, the Data Pulse also comes with a simple test program to see if your ST has one of the infamous hard drive killing DMA chips. These are, according to Atari, rarer than honest politicians, but it'd be nice to know whether or not you're one of the lucky few **before** you start committing your life story to disc. A very thoughtful addition.

The ProGate also comes with some extras, including a fixed fix for TOS 1.4, replacing the Atari Poolfix3, and an accessory which acts as an improved file selector, screen saver and mouse accelerator. The main Manager program can be set to talk to you either in English, French or German, showing how protar are very much a European company.

Gasteiner's additions to the basic formatting software, apart from the above-mentioned Turtle, include a program which allows you to turn on the computer and hard disc at the same time, and a German PD fast bit setter, not mentioned in the manual.

Like a Bat out of Hell

For speed, I've tried to standardize by running each disc along with any caching/speedup software that came with it through a little utility called Quick Index and another called RateHD, which came with the ICD utilities. The Quick Index timings are dependent on caching, etc., with 100% being a normal rating for floppy disc. RateHD ignores all that kind of stuff and just gets down to basics, measuring data transfer rate and average access time.

As a final resort, I also tried copying the same set of 226 files in 28 folders from one logical partition to another completely blank one, a total movement of 6,821,410 bytes.

As you can see, the Data Pulse and Carnegie scored heavily in all areas, though this was without the optional write verification which increases the time by around 20%.

The Carnegie has a better access time, but lower data transfer rate, giving it only a second's advantage in the file copying test, hardly significant. For some reason, it also scores lower on the GEMDOS file test. Funny old world, innit?

The Reference and the 900 also benefit from this lack of write verification, the former almost catching the ProGate in the file copying test, the latter surpassing it.

The Mega Drive, lacking both the caching software and the Quantum drives, is the slowest of the bunch, though the data read rate is pretty impressive.

It looks as if the most important factor in the speed of the disc operations is its access time as determined by RateHD, which differs wildly from the advertised access times. Except in the case of the Carnegie, the speed ratings for copying are almost exactly in relation to the access times, the slight difference between the ProGate and the Reference possibly being due to "other factors" such as the caching software. As the nice man at Gasteiner said, however, "who's going to notice the difference if their database loads 0.5 seconds quicker than someone else's?". But since his was the slowest disc, maybe he wasn't being totally impartial. Basically, if you're moving up from floppy, all these speeds are ferocious compared to what you're used to.

Book of Dreams

The manuals that come with the drives vary widely in quality. The protar manual covers just about everything you'll need to know, including how to set the ProGate up with different emulators and what the partition data formats are. It's got lots of pretty pictures and only once or twice gives away the fact that it was translated from German. It's spiral bound and has plastic covers.

The Gasteiner manual, by contrast, is flimsy and obviously not constructed with English as a first language, nor was it checked with a spelling checker. That said, it's still adequate, telling you all you need to know to set up the disc without too much pain and grief.

The ICD manual is superb, a properly bound booklet running to around 70 pages. The only problem with it is that it refers solely to the ICD interface and software, taking no account of the actual drive unit. The suppliers all provide a photocopied sheet to tell you about the drive itself, but that detracts a little from the overall professionalism.

Who's Gonna Drive You Home?

Before we get down to the nitty gritty, the reason why I decided to do this review was because I wanted a new hard drive. I'd decided to spend up to £500 - if I absolutely had to - and wanted something larger and faster than my current ageing 20MB Seagate, something capable of providing disc space for

a prospective PC emulator (now that 386 emulation on the ST is a reality), Mac emulator and Unix environment, plus increased space for my ST stuff. I'm looking at 80MB, minimum. This means that, at the end of this, I'm going to be putting my money on the line, just like you will (no, I don't get freebies and kick-backs out of this).

One of the most gratifying things about this particular comparative review is that there was not a single product which should be consigned to the kennel. The ST hard disc is well on its way to being a utility item for everyone, and just about everybody benefits.

The best buys in this lot depend substantially on your own plans and preferences, but that's a cop-out so I'll make some recommendations anyway after a bit of babble. The drives here are not direct competitors. Each company produces a range of drives with different capacities, different access speeds, different features, so take a look through the ads first of all.

That said, the review does give some indication of what you're likely to get out of each company. Service is also important, and a couple of things impressed me while trying to get these drives together. protar were always very helpful and friendly and were the only company to actually send me the product price range that I asked for. Ladbrooke became almost ridiculously helpful when I phoned to say I hadn't received a disc. They apologized, said they'd been let down on the delivery they were expecting, that they wouldn't have any for another week and that the manager would send his own drive out to make sure I had something to review (thanks, Colin).

Perhaps also of interest, Third Coast were invited to send a drive for review, and in fact claimed to have done so. It never turned up. Nor did the one they were going to send to replace it. Draw what conclusions you will. I've been through it all before with them.

If you're at the point where you can just afford to buy one of these drives, it might be best for you to wait a little longer and save a little more: the price/MB ratio drops substantially the further up the scale you go and you can easily find that for an extra £100, you can double the size of the drive.

The Mega Drive is the slowest and noisiest of the bunch, but what were you expecting for £250, gold plating? This is excellent value and a great starter if you've got a limited budget. An extra £75 gets you a further 10 MB and a turn of speed with the Reference, definitely worth considering if desk space is at a premium.

Both these and the 900 fall down if you have any long term plans since none incorporate the important DMA device selector switch. This means they are always device 0, and you have to build the rest of your system around this limitation. In the case of the 900, however, this is unlikely to be a problem simply because of the size of the drive. I mean, who really needs instant access to 100MB of data? Who could even keep track of 100MB of data? Still, I used to think that about 20MB.

The fact remains, though, that with the 900 you're getting 100MB of storage in a fast, small footprint drive for just £489, unthinkable a few years ago.

And Then There Were Three

All the above come with 12 month warranties, but if you're at all worried by reliability and want some extra reassurance, the ProGate is not only built superbly, but is also backed by a two year replacement warranty - not repair, but *complete replacement*. That shows a hell of a lot of confidence in their product and should give peace of mind. And it's a damn fine machine too. I was very tempted by it, but ....

Right up until the last minute, the winner, for me, was the Data Pulse. Fast, quiet, well featured and competitively priced with a two year warranty from, as they say, the longest established Atari dealer in the UK. I was going to get the 100 MB big brother of the one reviewed here, just tipping me over my £500 limit.

But then, just when I'd finished this review, ST Format turned up, doing exactly the same thing, comparing hard drives. In amongst their lot was a drive I'd never heard of before that apparently didn't work. Since it used standard components, I couldn't figure out what could be wrong with it, so I phoned the company, found out that Format had received a duff drive which had now been repaired and two days later got the Carnegie so that I could set the record straight.

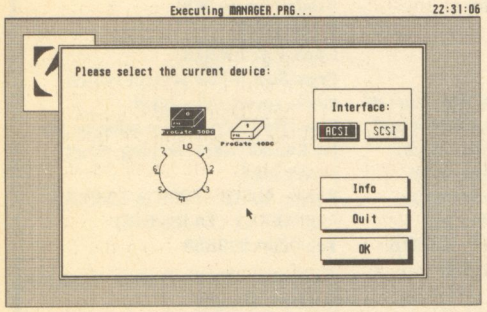
First of all, I tried doing the tests that Format said would make it fall down and beg for mercy. No problems. I tried my own little tests. Nothing wrong. I even tried (don't read this bit if you're al squeamish or bl employed by Hunter) turning the drive upside down while it was running and shaking it (just a little) to upset it. It just sat and stared at me stoically, wondering what indignities it was going to be put through next.

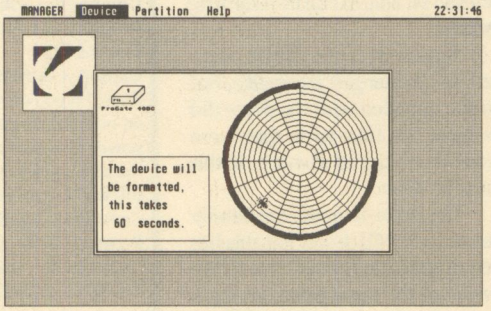
I really didn't want to like it. I'd already decided to go for the Data Pulse, but here was a fast drive, with clock, with adjustable DMA device number (though admittedly not in the most convenient fashion), of size small enough to be space saving, big enough to take a monitor, huge 200MB capacity and incredible price per Megabyte. I was so impressed, I bought the company. Well, no I didn't, that was a lie. But after having all these different machines to choose from, I've ditched my £500 limit and started squirreling away the money so that I can buy the drive.

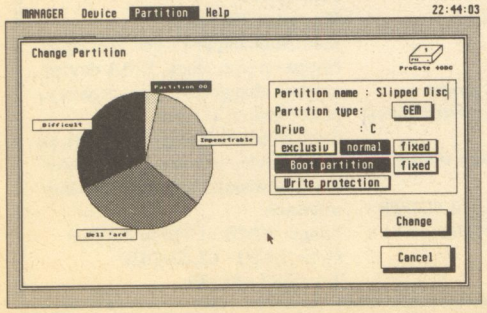
Addendum

After having posted off the above review, I got in touch with Hunter to arrange for my Carnegie drive. There was a problem. The price quoted above was only a special offer to try to get some interest going. With an unflattering review appearing at the same time as their ad, they didn't get the interest and so are now reverting to selling through dealers, which means putting the price up. How much? Well, you know that 200MB drive I was going to get for £649? Its current price is £849. This obviously puts it way out of the "golly, what fine value" league and stuffs it firmly into the "if only I could meet a rich, lonely widow" category. Still a goodly pounds per MB ratio (£4.25/MB), still the hugest beast around if you need that much storage, but a hell of a wodge of dosh to vanish in one splurge.

The recommended ratings now change. I was lucky enough to order a Carnegie when the lower price was being advertised. If I hadn't been, my first choice would have reverted to the Data Pulse from Ladbrooke. A 100MB version of the Carnegie at £449 would then have had level pegging with the ProGate.







protar software

Top left: Eeny, meeny .... where did the miny go?

Top right: protar's formatter in action. Pretty, innit?

Left: The range of options from protar's Manager program.

Table 1

	Price (£)	Cap (MB)	Dims (mm)	Dev Sel	Clock	64K (%)	GEM DOS (%)	Data Read KB/s	Av Acc ms	Copy sec	Drive Type	Price /MB (£)
Hunter Carnegie	649	200	280x70 x280	N*	Y	7153	7044	921	19	104	Rodime	3.25
Ladbrooke Data Pulse	429	50	325x70 x340	Y	Y	7153	8870	1041	25	105	Quantum	8.58
ProGate 40DC	423	40	340x65 x340	Y	N	6099	2469	649	29	144	Quantum	10.57
Power Series 900	489	100	125x55 x210	N	Y	4109	7983	451	27	128	NEC	4.89
Evesham Reference 40	325	40	125x60 x205	N	N	4749	8259	444	29	146	NEC	8.13
Gasteiner Mega Drive	249	30	325x60 x330	N	N	3968	1607	515	37	283	Seagate	8.30
Surface Supra Drive	399	50	140x80 x295	N	Y	6099	2469	641	29	178	Quantum	7.98

*** Can be selected internally without invalidating warranty (if you get prior permission).**

Addendum 2 - The Sequel

A Supra drive from Surface turned up today. It's fairly small, well vented, has internal power (unlike the other small drives) and, uniquely, features a SCSI out port to connect directly to another SCSI device without the need for another interface. With the time available, I had no chance to try this out, but it *sounds* like a good idea.

Also uniquely, it doesn't feature auto parking, a rather sad oversight. It comes with a range of PD software, including Turtle for back-ups, Krabat, a chess game, and a number of Spectrum 512 colour pictures and programs for displaying them. Quite an impressive range.

What's not so impressive is Supra's utility software. It works, but it's neither as easy to use as the protar, nor as comprehensive as the ICD. In fact, a number of the programs haven't had a wiff of an upgrade in four years.

Supra were one of the first companies to take the ST seriously. As such, I would hate to say anything against them, so I'll try to be as constructive as possible in the criticism. They deserve it.

Since Supra are so well established, they are a good, no risk bet. They need to look at their software as a matter of some urgency by looking around at what the competition are doing. Formatting took far longer using the Supra offering than using any of the others.

The timings are for the drive as it came, without any caching software. I'm pretty sure that the addition of some good caching software, either written by themselves or included in their PD offerings, would have given results for the copy test similar to those obtained using the ProGate or Reference. All other speed tests showed the Supra in that kind of class.

The noise level is greater than that of the ProGate, though not as great as that of the Mega Drive. It seems to be able to run cool for long periods.

Apparently, the DMA number can be changed internally, but the disc supplied with the drive did not have the files on it that were meant to reveal all about how this was to be done.

The price is quite reasonable (I tested a 40MB drive, but this has been dropped in favour of a 50Mb version at the same price, giving a good price per megabyte). If you have any use for the SCSI out port, this could be a very good buy for you, though you'll need a bit of Techie knowledge to use it, and to change the DMA device number.

The big letdown is the software. Once, when Supra ruled the hard drive world, it would have been quite adequate. Times have changed. Supra should take a look around and do the same.

Summary

Company: protar
Model: *ProGate 40DC*
Price: £423
Capacity: 40MB
Pros: Build quality, attention to detail, easy to use software, DMA device selector, two year replacement warranty.
Cons: No clock, switches at back, no backup software, most expensive per MB.
Range: 20MB - £280 to 160MB - £922 (£14 - £5.76/MB)
Tel: 0923 54133

Company: Ladbrooke
Model: *Data Pulse*
Price: £429
Capacity: 50MB
Pros: Equal fastest on test, quietest on test, DMA device selector and power switches at front, clock, backup software, extra demo software, two-year warranty.
Cons: Build quality, no plug.
Range: 50MB - £409 to 100MB - £539 (£8.18 - £5.39/MB)
Tel: 0772 203166

Company: Evesham
Model: *Reference 40*
Price: £325
Capacity: 40MB
Pros: Long lead from power supply, small size, plug fitted, good price.
Cons: No clock, no DMA device selector.
Range: 40MB - £325 and 100MB - £469 (£8.12 - £4.69/MB)
Tel: 0386 765500

Company: Gasteiner
Model: *Mega Drive*
Price: £249
Capacity: 30MB
Pros: Price, price and uh .... oh yes, price. Backup software.
Cons: Slowest and noisiest on test, wobbly connector, software not as powerful as others, no plug, no DMA device selector, no clock.
Range: 30MB - £249 to 100MB - £499 (£8.30 - £4.99/MB)
Tel: 081 365 1151

Company: Power
Model: *Series 900*
Price: £489
Capacity: 100MB
Pros: Size, write protect switch, clock, speed, noise level.
Cons: No DMA device selector, no backup software, no plug, short power lead.
Range: 40MB - £299 to 100MB - £489 (£7.42 - £4.89/MB)
Tel: 0234 843388

Company: Hunter Business Systems
Model: *Carnegie*
Price: £649
Capacity: 200MB
Pros: Stunning price per MB, equal fastest on test, clock, DMA device number changeable, size, capacity, power switch at front.
Cons: Gets hot (being remedied), no DMA device selector switch (have to fiddle around inside), no backup software.
Range: 70MB - £349 to 200MB - £649 (£4.99 - £3.25/MB)
Tel: 0382 581035

Calligrapher *Junior ?*

Calligrapher Junior is a word-processor with a difference - it has powerful graphic and presentation facilities to give your words more impact.

1 Fonts provided in a variety of styles. **Real bolds.** *Real italics.* Five different families of fonts supplied as standard:

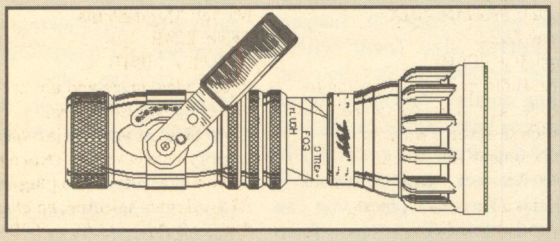
Zurich
Holland, Holland **Bold** and *Italic*
Unitype Medium and **Bold**
MathSymbols αβχδεφ γηABXΔEΦ
Ornaments ◒ ◎ △ ▮▮ ☎

2 Vector outline fonts allow you to print big headlines or small print from 6pt to 128pt.

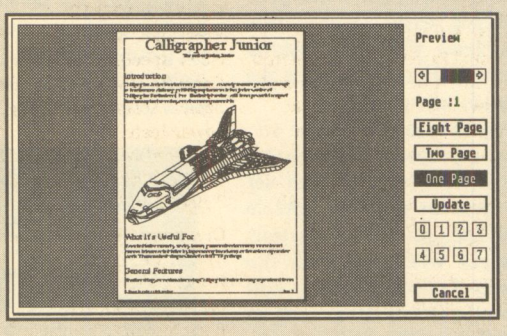
small print at 6pt using vector outline font

48pt Font

3 Imports .IMG and .GEM graphics, which can be freely resized within Calligrapher. You can also convert, crop and manipulate Degas and Neochrome pictures.

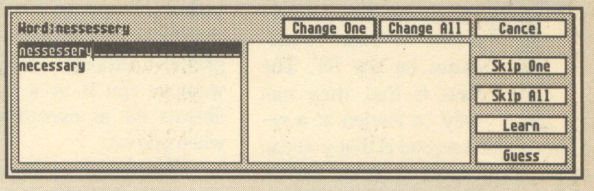


4 Preview your document before you print. You can view 1, 2 or 8 pages at a time.



5 Multiple columns. You can have several columns on the page, edit with multiple columns on screen and preview your work.

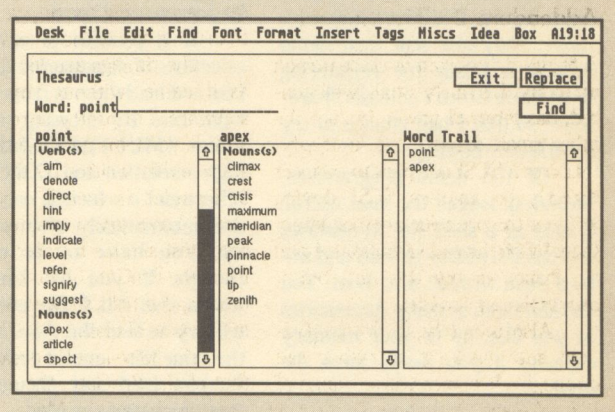
6 80,000 word spelling checker, with phonetic and alphabetic guess. User dictionary, skip one or all occurrences. You can even check as you type.



7 Up to 7 documents can be held in memory at once. You can switch between them and cut, copy and paste from one to another.

8 Drivers for 9 pin printers and 24 pin printers. (Will also drive ink jet printers such as the BJ10e at 180 DPI). If you have GDOS bitmap fonts, Calligrapher can use these as well.

9 200,000 Synonym thesaurus included as standard. (Requires 1 double sided disk drive).



10 Headers and footers on odd, even or all pages. You can change the headers and footers repeatedly throughout the document. Headers can contain multiple lines, rules and graphics etc.

11 Footnotes with identifying numbers. You can put almost anything in footnotes that can be included in normal text.

12 Calligrapher Junior can run on a 520 ST and is provided on single sided disks. 1Mb of memory is recommended.

13 Costs only **£69.00** all inclusive.

THE ONLY THING JUNIOR IS THE PRICE

Brochure and Demo disk from Working Title, PO Box 4, Eynsham, Oxford, OX8 1UD. Tel. 0865 88 35 92 Fax. 0865 88 32 33

Multidesk V2.2

from Codehead Software

Reviewed by Keith Jackson

There are two drawbacks to Desk Accessories on the ST. The first is that they can only be loaded at a re-boot and the second is that you can use a maximum of six at a time. The limit of six is not a problem, because I have not found a consistent need for more, but the idea of being able to loading Accessories throughout an operating session appeals very much. If there is one thing I hate it is having to reboot the machine to change settings. It's messy.

I recently bought G+Plus, the Codehead Software GDOS replacement, and I was very impressed by its quality (see STA 8). With the order, I received an advertising flier for the other products in the Codehead Software range. They also sent their demo disk as a bonus for registering some Little Green Footballs Shareware, so that I had chance to try them before buying.

Of the demo programmes, Multidesk looked the most useful. It acts as a shell for Accessories and has the ability to load and unload them without a re-boot. You can also have as many Accessories as you like, up to your memory capacity if you really have the need.

Details

The package comes with a single disk, a 32-page manual for version 2.0 and a Readme file for the updates. It can be installed as an Accessory or as a normal programme, although why you would want to run it as a programme defeats me as everything is lost when you exit.

Multidesk is installed like any other Accessory and appears in the left-hand menu as normal, although you have the unusual option of being able to change the wording displayed there. When you select it a dialogue box appears (Figure 1) which is the point from which your other Accessories are now loaded and selected. In the version I bought you can add up to 32 Accessories at once but, if that is insufficient, you can re-install Multidesk inside itself and carry on, one level down! The manual suggests that this can be done several times.

It is possible to save your selections of Accessories as *.MLT files and load them in from the dialogue-box. By choosing the right name (MULTDESK.MLT for high-resolution and COLOR.MLT otherwise) a selection can be loaded automatically when you boot up. You have to be careful, though. If you list Multidesk within that MLT file each copy will try to load the Accessories in the same file - until it imitates the Oozlum bird and disappears in ever-decreasing circles!

I like to turn my machine on and get on with whatever I have to do. I get annoyed, unreasonably so, about rebooting in the middle of a session. Compared to the length of time I will actually spend working it's nothing but it really gets under my skin. Multidesk seemed to be the answer as I could load and unload Accessories as my needs changed.

When I did not need any Accessories I could collapse its buffer to a minimum of 1k. Only a few Accessories are incompatible and most do odd-ball things like reserve two slots.

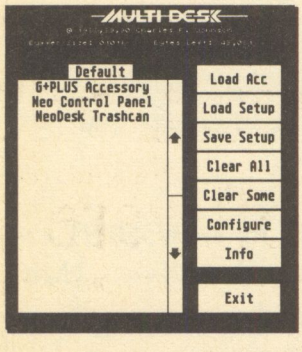


Figure 1: This is the new selection screen for your accessories. You can save lists for different applications and load them almost as required.

Experience with Multidesk

I soon found that there are drawbacks to Multidesk which restrict its flexibilty. The first is to do with the ST's memory management, I believe. When any programme loads, it captures an amount of memory for its own use. Having done that, it releases the rest back to the system. In the case of Multidesk, this can be any amount equal to or greater than that required to contain the Accessories you need, set either by configuring the Accessory or from within the MLT file you load. It also "snapshots" the system vectors at this point and these may be changed by subsequent programmes.

This all means that any operation which results in changing the buffer size from within another programme is taboo and loading another Accessory (even when you have buffer capacity to spare) may lead to a crash. There are no excuses - you are warned if you try. The only place you can safely do these operations is from the built-in GEM Desktop.

If you are using Neodesk or Gemini, which are just GEM programmes at the end of the day, you have to drop out, make your changes and reload. You will have no problems with the Desktop replacement Hotwire because the Codeheads have covered it.

I spent quite some time setting up my system with appropriate MLT files and then set Super Boot to give me suitable starting line-ups. Most of the time was spent wrestling with the manual as I tried to make it load my set-ups in colour as well as monochrome. The manual tells you about MULTDESK.MLT but fails to tell you that the autoload name for a medium or low resolution system is COLOR.MLT at the same page. I still cannot understand the need for two filenames, though.

Most of the time it worked well and I reduced the number of keys I needed to pre-set. The one programme which did not always work properly was their own G+plus, much to my surprise. This arises because certain Accessories link into programmes and they must be both installed and initialised before their associated programme is run.

Questions and (some) Answers

One trio of my Superboot keys is set to auto-run Degas Elite in high, medium and low resolutions. Since buying G+Plus I find that I have no more need for Atari GDOS but the extra facilities which make the Codehead replacement so useful are only accessible via the Accessory.

Without the Accessory in place, G+Plus acts only as a plain-vanilla GDOS substitute. Although I had been using this arrangement without problems for some time, I found loading the Accessory via Multidesk meant that Degas only loaded with the default arrangement. I could not make the G+plus programme pick up the predefined SYS file for Degas no matter where I put it in the list.

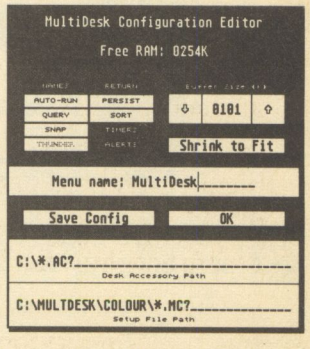


Figure 2: The configuration screen. Select paths, buffer size and title for display in the Desk menu.

I thought that I had found a bug because I had had no previous problem running the programme in this way. I rang the States and was, I feel, brushed off.

The "bug" is actually a deficiency in the TOS 1.4 auto-run routine. No checks are made to ensure that all Accessories have been initialised before a programme is launched. This can be overcome, however, because I had been running it this way for weeks before buying Multidesk.

Neodesk 3 has a built-in delay to ensure that it does not boot until the Accessories are in place and Superboot v7 generates a pause before allowing the system to move on and run the Desktop for the same reason. Unless I used both of these to give me two pauses I had problems with G+Plus being beaten by the system when used with Multidesk.

The trouble is that Multidesk acts as the sole Accessory and each of these traps only ensures that any conventionally-installed Accessory has initialised before continuing. However, Multidesk does not load and initialise the Accessories listed in the MLT file until after the GEM routines have started so the traps are ineffective. You can see this by when the indicator screens show up.

Having explained this to me, the Codeheads said that the answer was not for them to fix Multidesk but for me to throw away Neodesk 3 and buy Hotwire! I'm sure that they are fed up with people ringing with this "bug" but if they know it may happen why is it not in the manual or the README file? If other programmers can generate suitable pauses, can't the Codeheads?

Summary

At the end of the day, Multidesk performs as advertised. Provided you do not use a replacement Desktop, except for Codehead's Hotwire, you can add umpteen Accessories at will. The drawback is having to use the poor-quality Atari Desktop.

Multidesk is, undoubtedly, a very clever piece of coding which overcomes a deficiency in the ST's operating system but, sadly, it does not really give sufficient "added value" for me to recommend it to anyone who is not constantly plagued by a lack of Accessories. It is quite expensive and I feel that the manual is not too well laid out.

It must have given the programmer a great deal of satisfaction to have cracked the problem but I don't feel that I would have bought the programme if I had been able to use the demo version for more than 10 minutes at a time. It was long enough to whet the appetite but not long enough to find all the drawbacks.

I now find that I am using it less and less and I am steadily resetting my Superboot keys as they were before - and isn't that the acid test of any software?

For:

- ✓ Allows the use of many more Accessories at a time up to your memory limit.
- ✓ Allows Accessories to be loaded and unloaded without rebooting.

Against:

- × Is incompatible with TOS 1.4's autorun feature.
- × Cannot be changed except from the Atari Desktop or Hotwire.
- × Expensive for the benefits it gives.
- × Not useful unless you regularly require more than six Accessories in memory at once.
- × Manual is not well laid out.

Product: .....Multidesk
Version: 2.2
Price: £29.95
Supplier: .....System Solutions
19 Sumner
Workshops
80 Sumner Road
London
SE15 6LA
Tel: 071 252 7775
System: .....any ST, colour or mono

pero News • Prospero News • Prospero News • Prospero News • Prospero News • Prospero

PROSPERO ANNOUNCES MAJOR BREAKTHROUGH

Prospero Fortran for the Atari TT

Following years of development, Prospero Software has launched its latest Fortran compiler, specifically designed for the Atari TT. Prospero Fortran produces highly optimized code that makes full use of the 68030 and 68881 processors, to produce some superb benchmarks. This professional compiler and complete development system costs just £199.75. Write or phone now for more information.

Prospero Software
LANGUAGES FOR MICROCOMPUTER PROFESSIONALS

Prospero Software Ltd., 190 Castelnau, London SW13 9DH. Tel. 081 741 8531. Fax. 081 748 9344

News • Prospero News • Prospero News • Prospero News • Prospero News • Prospero News

THE ULTIMATE RIPPER

Review by Michael Baxter

About two years ago, a company called Romantic Robot released a utility cartridge which promised to be a hackers' dream. Multiface boasted a whole host of features designed to allow the user to study, modify and save programs and screens, even with the most heavily protected software. Unfortunately, although Multiface was packed with powerful features, its ability to interrupt running programs - especially games - was disappointing. All too often the little grey button on the side of the cartridge had no effect, rendering the powerful backup and editing routines useless. Romantic Robot attributed this to "alas, the basic architecture of the ST" and said there was little they could do about it.

Now, two years on, a French company called Eurosoft have designed a similar cartridge, but with an enhanced specification and a claimed 100% success rate. So, has the frustrated hacker's dream finally been realised?

The "Ultimate Ripper" package consists of a standard grey ROM cartridge and a pocket-sized 43-page user manual. I would like to be able to say that the manual has been well written, because it is set out in a clear, logical manner, and it does contain a great deal of technical information and advice, and no doubt, the original French version will probably read very well. Unfortunately, the translation from French to English has been completely mucked up - I sincerely hope that the person responsible for the translation does not rely on this for a living because if he/she does, then their career prospects are not too promising. Quite simply, it is awful, the English being reminiscent of those terrible jokes found in cheap Taiwanese Christmas crackers. It really is that bad. A device like this can often be baffling enough to novices and experienced users alike, without having to guess what the manual is really trying to say. I won't embarrass anyone at Power Computing by quoting extracts from the manual; suffice to say that it desperately needs attention. The cartridge itself is solidly constructed and perfectly colour matched to the computer, but it has no position markings on the toggle switch, and despite the manual asking you to make a note of the serial number on the cartridge, there isn't one.

No Pirates?

Although the Ultimate Ripper seems to be pitched at the same market as Multiface, it does have one glaring omission - perhaps it is a deliberate one - in that it cannot save interrupted programs to disk. As such, the Ultimate Ripper has no value whatsoever as a backup device, something which neither the product's advertising nor its packaging is keen to point out. The official line from the manufacturers is that they do not wish to encourage piracy: they would rather give people the chance to examine other people's programs, which might encourage them to write their own software. Admirable intentions no doubt, but whether this philosophy will be turned into hard cash is another matter. You could argue that Multiface did not encourage piracy either, as the original Multiface cartridge had to be plugged in to run any duplicated software, at least giving legitimate users the chance to back up their programs.

How Does It Work?

The Ultimate Ripper, as its name suggests, is brutally simple to operate. Simply run the software you wish to interrupt as normal, and when you have reached the point where you want to freeze it, press and hold the computer's reset button, flick the switch on the cartridge (once you've worked out which position is which - dig dig) and release the reset button. You are then presented with a menu which lets you access the Ripper's memory and disk editing facilities.

Features

So, now we've established that the manual is naff, and that the cartridge's uses as a backup device are nil, is there anything positive I can say about the product? Well, actually, the Ultimate Ripper does have one or two redeeming features, but once again, the designers have shot themselves in the foot with another unbelievable omission. Once you have frozen a program, the cartridge has facilities to read, search and edit memory, edit screen configurations, alter program parameters, load and save screen displays, alter colour palettes, and search for sprites. All well and good, but what are you going to want to do when you have edited all this memory, altered the graphics, and tweaked a few program parameters? You are going to want to restart the program to see your changes in action, right? Well, you can't, not unless you - and I quote - "connect pin 20 (Dtr) to pin 22 (Ring indicator) of your RS232 on a push button. When pushing this button you create the interruption 6 of the MFP". Great, isn't it? Those are all the instructions you are given, which I would imagine are unintelligible to 95% of ST owners. So unless you get your soldering kit out and make the necessary connections, it is impossible to restart the interrupted program. You are then told that this method of MFP interruption is not 100% efficient! Do I detect a touch of the Multiface syndrome creeping in perhaps? The very least Power Computing could have done was supply this push button device: after all, the package is incomplete without it. Once again, there is no mention of this on the packaging.

Memory Functions

The much touted memory editor is unfortunately a pretty bog-standard affair, its main claim to fame being its ability to disassemble the binary code in any given part of memory, which is not exactly a breathtaking achievement. The bare minimum of manipulative functions are included, such as memory copy, memory fill, and search, which to be fair is quite fast. Unfortunately, the same cannot be said for the screen display - despite being TOS based, it makes GEM programs like Word Writer and 1st Word look turbocharged. Try and do any amount of serious work with this thing and you will never complain about slow scrolling again. As far as CPU registers, the program counter, stack pointers and such like are concerned, they can't even be displayed, never mind altered. The save function can dump any part of memory to disk, or alternatively save the disassembly listing in Ascii format, ready for loading into most dedicated assemblers.

Screen Editing

The image ripper is possibly the most innovative part of the pack-

age. It allows any part of the ST's memory to be displayed on screen, with fast paging forward/backward through memory and smooth(ish) line by line scrolling, although no use is made of the STE's built in hardware scrolling capabilities. This function is primarily designed to allow you to find program screens and sprites, alter their colours, and then save them to a floppy disk. You can even load banks of sprites and alternative screens, but since you can't restart the frozen program, why bother? A number of fairly advanced features are built in to help get around the fact that most sprites and game graphics are compressed or superimposed in an effort to save memory. The image ripper can turn planes on and off, create a virtual screen that is narrower or wider than the standard screen modes (to accommodate scenery that is larger in memory than on screen), and a superposition function which can superimpose screen planes. With a bit of practice, most sprite graphics can be turned from multicoloured garbage into recognisable forms.

Disk Utilities

The disk functions are split into two categories and, unfortunately, provide no surprises. The disk utilities menu simply allows you to access the usual range of Dos facilities such as rename, create new folder, delete file, show directory, show free space and format. Nothing to set the pulse racing there, and it's much the same story with the disk editor. As you would expect, it allows you to move freely around a given disk, searching for text strings and changing individual bytes. It can disassemble a disk sector, and display sector information such as checksums and CRC sector read tests, useful for spotting copy protection. Again, screen scrolling is painfully slow. If you're serious about disk editing in this manner, such programs are available in the public domain that are ten times better, or treat yourself to a copy of HiSoft's Knife ST.

External Loader

Any non-GEM programs can be loaded into memory and executed, provided enough free memory remains in the system. Alternatively, you can load a file or specific tracks from a disk and then manipulate them in the usual way using the cartridge's memory, image and music functions.

Music Ripper

The "Music Ripper" is divided into two parts. It is primarily designed to search though memory and find either sound chip music or Soundtracker music. Alternatively, you can manually search through memory for digitized sound samples. The former is fully automatic - simply define the start and end search addresses and away it goes. If it is successful, you are given the option of saving the music in either executable or data format. Unfortunately, this function only works if the music data is in standard format, which is an increasingly uncommon occurrence in recent software. The "Digital Ripper" allows you to play any part of the computer's memory as if it were a sound sample, at frequencies ranging from 2.5 to 25khz. Support is also available for the STE's DMA sample playback facility. Again, if you successfully isolate a sample, you can save it in executable format, or in a raw data format, suitable for use with the ST Replay series of sound samplers.

Points for:

- ✓ Can break into any ST program

Points Against:

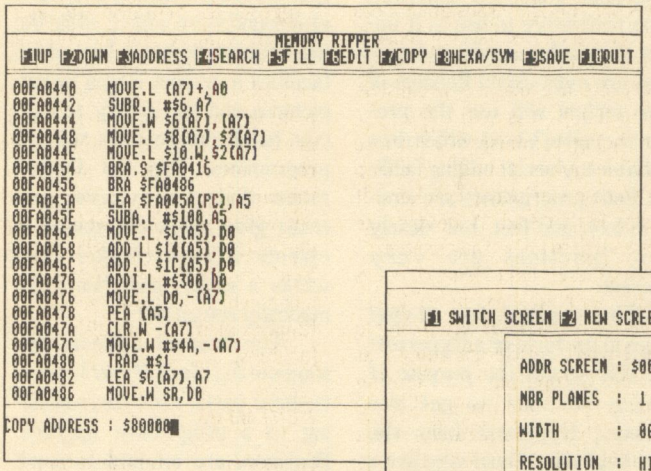
- × Terrible Manual
- × Very average utilities
- × Can't restart interrupted programs
- × Painfully slow scrolling

Conclusion

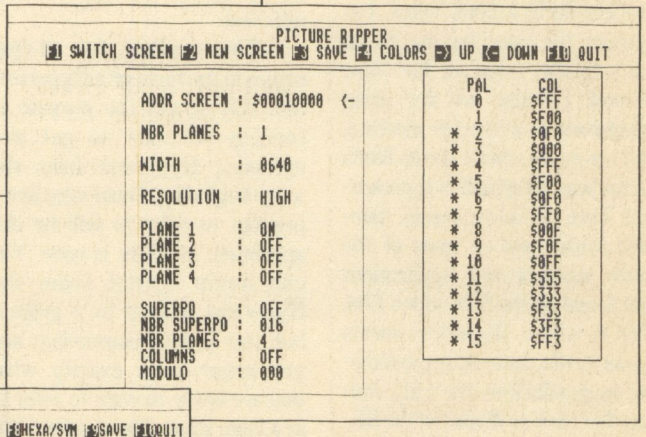
There isn't really anything that is "ultimate" about the Ultimate Ripper at all. Most of the utilities that are contained within the cartridge are very average indeed - the screen image editor and music ripper only just being the exceptions. All that can be said in its favour is that these rudimentary facilities can be accessed from within a frozen program - and the value of that depends entirely on the needs of each individual user. If you're not a hardened hacker, then I would imagine that there is little in this package that will tempt you to part with your hard earned cash.

The Competition

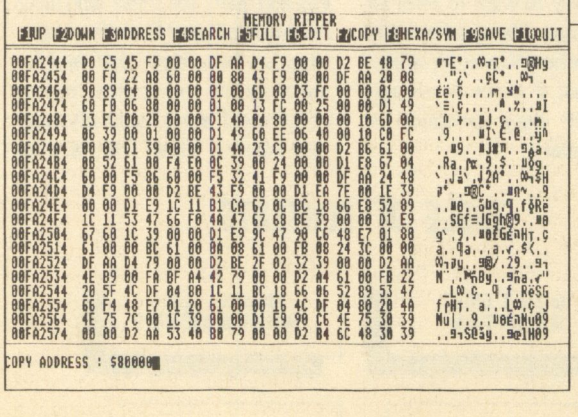
Multiface ST v2.00, £49.95, Romantic Robot (tel: 081 200 8870); allows the editing, inspection and backing up of interrupted programs. Includes memory editor and screen saver, as well as a very powerful disk organiser. Lacks the Ultimate Ripper's disassembly and sound editing features. Hampered only by poor interruption rates. Not STE compatible.



Left: Memory Ripper Disassembly Screen - any part of RAM or ROM can be disassembled and saved as an ASCII file ready for import into a suitable assembler.



Right: The Picture Ripper - can take a while to figure out, and the keyboard commands are fiddly, but the results can be rewarding



Above: The Memory Ripper Hexadecimal Screen - the Ultimate Ripper memory editing screen.

Product:	The Ultimate Ripper
Version:	1.2
Price:	£39.95
Supplier:	Power Computing Unit 8 Railton Road Woburn Road Ind. Estate Kempston MK42 7PN
Tel:	0234 843388
Fax:	0234 840234
Manifest:	ROM Cartridge, 43-page manual
System:	All ST/STE's Mono/Colour

Hype!

Hypertext is a revolutionary way of accessing information via a computer. Until now, hypermedia applications have only been available for PC's and Macintoshes. Now, Kevin Woolley has written and released as shareware the first hypermedia package for the ST. Sandra Vogel takes a look.

What is Hypertext?

Hypertext is a way of accessing information which utilises the special characteristics of computers. Unlike books, which require that information is laid out page by page in a linear fashion, computer storage has developed to the stage where information can be stored randomly. Hypertext allows the user to take advantage of this. In effect, Hypertext represents what it would be like only ever using a book via its index, rather than reading from beginning to end.

But Hypertext is more than just this in two respects. First, it is intelligent enough to be able to point the user to other, related information which might be interesting, rather in the way 'see' references do in a book index, but without the user having to go back to the index all the time. Second, because we are using ***computers*** as a storage medium, and not ***paper***, there are no limits on the way information is presented. Text, pictures, music, sampled sound, and on some of the more spohisticated applications (not found on the ST), video film. This is where Hypertext meets hypermedia, and with hypermedia the possibilities are truly endless. But back to ***Hype!*** on the ST.

Hype! works in both medium and high resolution, though you will have to get different versions of the programme depending on the resolution you want to use, as the graphics standards are different, and ***Hype!*** occupies too much disc space for graphics for both resolutions to be included on a single disc.

Getting Started

Hype! consists of two programmes. ***Hype!*** itself is the Hypertext generation programme - the one you will use to produce your 'scripts'. (Scripts is the name given to hypertext documents. The word document is too restrictive to use as it implies that only words and pictures are ever used.) Readers of your scripts will use the programme called View!, which does not have any script editing facilities. Both programmes are similar in look and feel, but clearly their functions are very different.

The manual for ***Hype!*** comes in the form of a Hypertext file. This serves the purpose of forcing the user to get into operating Hypertext from the very beginning. Those who like a printout to refer to will be disappointed, as there is none. You can dump output from the Hypertext manual to a printer, but this is time-consuming, and you never know exactly what you are likely to want to refer to at a later stage. The good news is that the author Kevin Woolley suggests that if there is enough interest he may produce a printed manual.

Hype! has had two previous incarnations. The first was as a basic text and graphics programme. Later, facilities for sampled sound were added, while the most recent upgrade has added facilities to import Degas format pictures and the ability to execute batch programmes and sub programmes. This last feature means that, for example, you could give users the option to execute a virus checker from within a script, and then automatically return to it.

The manual reflects the stages in the life of ***Hype!*** It exists in three parts, each corresponding to a programme upgrade. Beginners are advised to work through each of the three manuals in turn. Those who have already used earlier versions need only bother with the new part. While this makes getting into the system relatively painless and quick for those who have been using ***Hype!*** from the beginning, it does mean that newcomers might experience a few problems. I would strongly suggest running View! from a ram-disc to avoid frustrating waits for disc access when you choose the wrong option.

All about frames

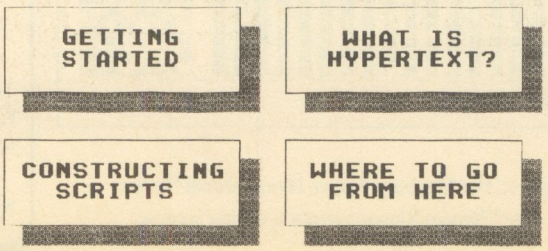
Hype! scripts are constructed from 'frames'. You could think of a frame as being like a database record, though not restricted to textual content. ***Hype!*** currently limits scripts to 500 frames each. You will do very well to reach this limit! A frame of information can take up more visual space than the screen allows - the scroll bars are used to get around this, and users of your finished script have the option of viewing in 'full screen mode' - getting rid of scroll bars and menu line altogether.

You enable users to navigate around frames via 'links' which you create during the script production process. So a single frame could have a number of click boxes on it, some representing access to further text, others to pictures and still others to sounds. Making a selection will result in the programme turning to that picture frame.

Hype! implements a couple of features which make life easier for the user. Each frame is automatically numbered by ***Hype!***. This number is displayed while the user is viewing a script. Users can jot down the numbers of frames they are interested in and return to them later. Very useful if you decide a few frames down the line that you have taken a wrong choice, or would like to explore an avenue you saw earlier and do not want to retrace your steps frame by frame. Similarly ***Hype!*** allows the user to select the 'last frame' they viewed - very handy if a wrong choice is made.

Hype! allows you to link one frame to up to eight others, giving you a very large number of

TABLE OF CONTENTS



possible branches to use. In addition, you have one 'default' link available. So, to each frame you can link a graphic, some sampled sound, a TOS programme, a GEM programme, and a batch file, and still have a few frames to spare! Hypertext allows its authors to be imaginative.

Be prepared!

But beware! There is a lot of work to do before you even begin to use ***Hype!*** You will need to settle down with pen and paper and write a 'storyboard' for your script, outlining roughly the content of each frame, and what links you want to make. Then you can go to your word processor (First Word, or any ASCII documents are fine), art package (Degas), sound sampler, MIDI package, etc., and create the documents for each of the frames you want to use.

You will need to be quite detailed in your planning with pen and paper before you even begin to get going with ***Hype!*** itself. But one of the good things about working with the programme is that it is very hospitable to changes of mind as you go along. There is no requirement to set up paramaters, filesizes, etc., at the start, and you can allow your script to evolve as you work with it, even at the final stages. For example, you could leave out pictures or sounds altogether at the beginning, and decide after you have seen a working copy of your script where to include them. Or you could produce a shell, with a few frames and links, and see how that looks and feels, before returning to the drawing board to refine it.

The final steps

Once you have got yourself organised with a plan, and have produced all the text, pictures and sound you think you need, you are ready to roll with ***Hype!*** You will have done all the hard work by now, and the lion's share of the production process is over. All ***Hype!*** does is allow you to recreate all the links between the various frames you made on paper, on the computer. Using ***Hype!*** to do this is very simple.

The whole thing is menu driven. You must 'Import' your frames, and 'construct' the script you are producing. You will also create, edit, move and delete links. You may choose to make executable programmes or batch files available from within a script, but really that's all there is to it.

One word of advice though - put all the relevant bits and pieces, including all your created work, on to a ramdisc, and then run ***Hype!*** from there. If you don't use a ramdisc you will probably die of frustration waiting for all the disc access ***Hype!*** needs. The Goodies accessory is supplied with the programme for this purpose.

Conclusion

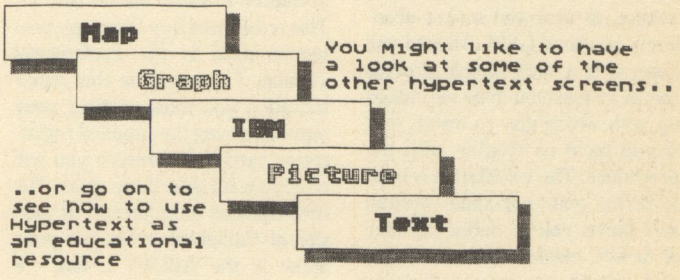
Hype! is an innovative programme indeed! The author claims that users of the programme include schools - and I can see why. There are some limitations and problems - some of these are due to the ST and are in no way the fault of the author - one which springs to mind is that 520 ST owners are going to be restricted in the amount of data they can incorporate in their scripts if they want to reduce disc access time by using the ramdisc. The disc manual takes over 360k of storage, and comprises a little over 40 frames. You will therefore almost certainly need a double sided disc drive too.

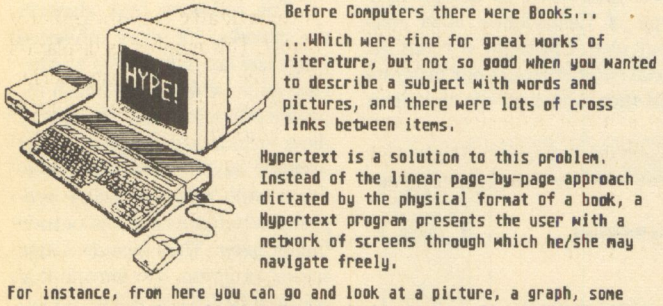
A second gripe is that I would have liked to see some kind of print-out manual, even if only a short reference guide, particularly for the novice user. But, when my mum bought an ST, after years of my saying how wonderful they were, she said she found it easier to learn from on-disc documentation than from printed manuals, and so I could be totally wrong about that! At the very least, though, I do think registered users deserve a printed manual - they do not currently get one (but see above).

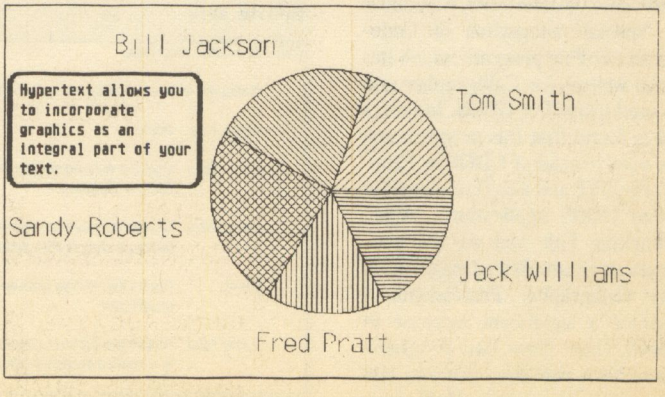
Despite these gripes, I have to say that ***Hype!*** is an excellent implementation. It is not Hypertext at its best, but the ST is not a Mac!

Hype is available as a PD version for £3 or the full Shareware version is available for £19.95. You are recommended to try the PD version first. Both versions are available from

WoolleySoft
Humblesknowe Cottage
Raymole
Dunblane
Perthshire
Scotland
FK15 0BA.


Map
Graph
IBM
Picture
Text
You might like to have a look at some of the other hypertext screens..
..or go on to see how to use Hypertext as an educational resource


HYPE!
Before Computers there were Books...
...Which were fine for great works of literature, but not so good when you wanted to describe a subject with words and pictures, and there were lots of cross links between items.
Hypertext is a solution to this problem. Instead of the linear page-by-page approach dictated by the physical format of a book, a Hypertext program presents the user with a network of screens through which he/she may navigate freely.
For instance, from here you can go and look at a picture, a graph, some text, or a map. Just click on the appropriate word. If you hit F1 (which goes to the default next screen) you'll see something to make all you IBM documentation fans feel at home!



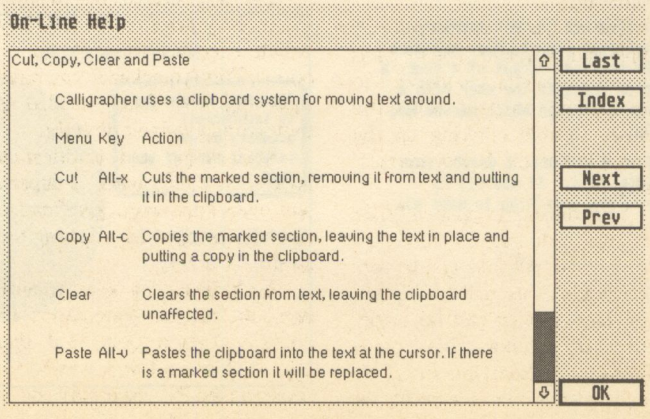
Calligrapher Junior

Review by Dr. Steve Henderson

When I reviewed Calligrapher Professional in issue 4 of ST Applications I mentioned that a "cut down" version called Calligrapher Junior was to be released later in the year. It has now arrived and its price is actually £10 less than I mentioned in the review. At £69 it looks like causing quite a stir in the lower price end of the ST word processing market. This price puts it into direct competition with First Word Plus which has become the de facto standard by which other word processors are judged.

Calligrapher Junior is supplied as a copy protected, three single-sided disc set and comes with a a 264-page ring-bound manual and a summary card detailing a brief summary of commands and keyboard shortcuts. It will operate in either high or medium resolution. It will run on a 520 ST, but 1MB is recommended for anything other than fairly small tasks. In order to use the program, you have to go through an installation procedure which is somewhat reminiscent of Timeworks DTP installation. Although less time-consuming than installing the Professional version, it still takes a fair amount of time and makes absolutely no use of GEM. All said and done, it is a very simple process and as long as you don't get mixed up with which disc to insert, you should have no trouble with the procedure. The installation is used to define your particular system and allows you to define number of drives, resolution(s) to be used and whether various foreign characters and on line help facilities should be installed. The end result of this procedure is a pair of working discs. You can make backups of these working discs as desired. Inserting the boot disc and resetting your machine runs the LINE ARC program which will control Calligrapher's sophisticated vector outline fonts. Also run is a "special" adaptation of Code-Head's G+Plus program which has been written for Calligrapher and is used instead of GDOS. In fact, I have found that this program can be used instead of GDOS in Timeworks DTP and also (I presume) in other GDOS applications. When Working Title sent me this program as an unsolicited upgrade to my Calligrapher Professional, I noticed a significant increase in speed. Once these two programs have been run then you can run the main program. Half way through running you are prompted to insert master disc #1. This is the same key disc copy protection used in the Professional version. To overcome this minor irritation you must register your purchase using the supplied registration card and in return you will receive a further three discs. The first contains an unprotected version of Calligrapher but has your name in the ABOUT .. box - a deterent to handing out copies to all and sundry! There is no need to go through the whole installation procedure again as a simple install program is provided to alter your master discs. The second disc contains a further three font families which I'll describe later. The third disc contains the thesaurus PAK and both of these discs contain install programs. If you choose not to register your purchase then be warned that you will be unable to use any of the additional PAKS as they can only be installed onto an unprotected version of Calligrapher. I hope to write a brief article on the various PAKS which are available in the near future. The install program on the thesaurus results in a third working disc being produced to hold the thesaurus file.

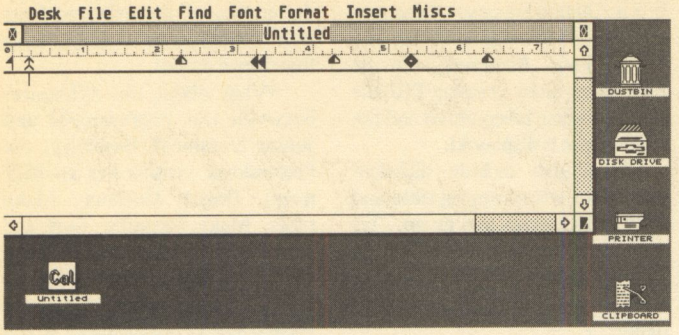
Once you have run the install program, you are unable to use the thesaurus master disc with any copy of Calligrapher other than your own. I presume it reads the serial number from your program and then writes to the thesaurus disc as the installation only works with the write protect off.

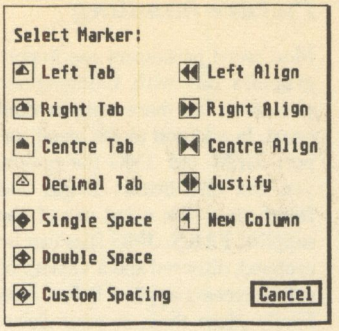

On-Line Help
Cut, Copy, Clear and Paste
Calligrapher uses a clipboard system for moving text around.
Menu Key Action
Cut Alt-x Cuts the marked section, removing it from text and putting it in the clipboard.
Copy Alt-c Copies the marked section, leaving the text in place and putting a copy in the clipboard.
Clear Clears the section from text, leaving the clipboard unaffected.
Paste Alt-v Pastes the clipboard into the text at the cursor. If there is a marked section it will be replaced.
Last
Index
Next
Prev
OK

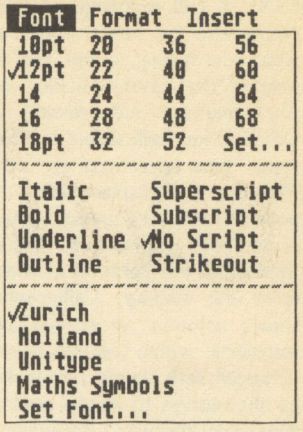
Documentation

Calligrapher Junior is remarkably intuitive to use even for the complete word processing novice, and if you have used any sort of word processor you will have no trouble in getting going. The manual is a shining example of how all manuals should be written and laid out. It leads you through the basic steps in concise terms and at the end of each teaching chapter there is a tutorial to illustrate the points. If you get it wrong, the disc even contains a copy of what you should have produced in order to let you see what was intended. Having worked your way through the first four chapters and attendant tutorials you are fairly competent in the basic operation of the program. If you do have problems while using the program simply pressing the HELP key accesses the extensive on-line help menu. This gives access to the most comprehensive help screens I have used and will prove a boon while learning the subtleties of the program.

The following four chapters are intended for more advanced usage and are followed by a reference guide which goes though the menu options in detail. The appendices include a description of the supplied toolbox programs. These are a wide range of utility programs which are run from outside Calligrapher. They include a date setting program, a command key editor, a GDOS font editor, a keyboard map editor, a font size conversion program and the ubiquitous Snapshot program. I have seen poorer collections of utilities sold as commercial products and Working Title are to be commended for their generosity in supplying them in such a low price package.





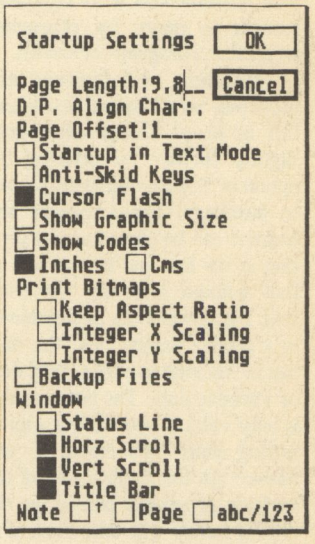


Top left: Calligrapher's Desktop.

Top centre: Select marker dialogue.

Top right: Font, point size and style selection.

Right: The default startup settings may be changed by the user and saved as 'user-defined defaults'.



Desktop

The main screen of Calligrapher obscures a desktop remarkably similar to the normal GEM desktop but with several additional icons. As the main edit screen can be resized in the normal GEM manner these can be made visible if you want to use them.

Dragging files to the dustbin icon closes them but if you have been editing it then you are offered the option to save the file before closing. The disc drive icon is particularly handy as it allows you to delete files from disc, create a new folder or to replace an open document with one from disc - again with the option of saving first. The icon at the bottom left of the screen represents the document held in memory. Although only one document is shown as open above, you can have up to seven documents open at a time providing you have the memory capacity. Dragging a document icon onto the printer icon will print the document as it stands using the current printer settings. The final icon is the clipboard. This is used in the normal cut and paste routines but if you find yourself desperately short of memory you can save a few K by dragging this icon to the dustbin. Be warned that anything held in the clipboard will be lost if you carry out this option. The icons can be dragged around the screen to positions which suit your taste.

Nearly all Calligrapher's functions and facilities are accessed via the standard GEM drop down menus. Some menu options will result in other pop up menus being displayed. Virtually all of the menu options can be called by keyboard shortcuts and these are detailed in the reference card. The shortcuts used all appeal as logical and remind me of those used on MacWrite on the Apple Mac. Once you are familiar with the program, you will find these save a lot of time and mouse work.

Working Display

Text is controlled by means of rulers and there is no limit to the number of rulers contained within a document. Calligrapher is truly WYSIWYG, and the on screen display shows all text features including the proportional justification. This is beautifully handled and is very similar to Signum 2 - none of the variable gaps between words when you justify in First Word Plus. The only exception to the WYSIWYG is when you use large point sizes. These characters appear blocky, but don't worry: they will print out smoothly. This is a machine limitation and if you have 2MB and a hard disc, then the vector outline fonts will show on screen. Fonts can be used in any size from 6-point to a massive 128-point in increments of 1 point. This is possible because the vector outline fonts are stored as mathematical descriptions and can be rescaled with no loss of definition. The two font families supplied with the package are clones of Swiss and Times. The three additional fonts you receive on registration are a maths/Greek font, and clones of Courier and Zapf Dingbats. The latter is the font with the pointing hands, Access and Visa symbols, etc. Shades of DTP, my wife commented. Working Title are now selling a wide range of different type faces at £18 per disc and they cover virtually everything you could want.

The control of text by rulers is simple and powerful. The margins are set by dragging the markers to the desired position with the mouse. Double clicking on the ruler invokes the 'select marker' dialogue.

Four different types of TABS are provided: left, right, centre and decimal. All tabs can be leadered with either solid or dotted lines. Line spacing can be single, double or custom. This option allows for additional line and paragraph spacings in increments of points. This allows a remarkable degree of control over spacing and I found it to be of particular use when using large point sizes. This dialogue also controls whether the text will be aligned left, right, centered or justified.

Calling the Customise option from the MISCS menu allows you to set a range of options, most of which can become the default options if you set them from the Startup Settings from within the same menu.

When you attempt to leave Calligrapher, you are presented with the option of saving these settings which, if taken, results in them becoming the default conditions next time you run the program.

All of the usual text options are available - sub/superscript, italics, bold, etc., and are called from the FONT menu from where you also control the point size of the text..

Font selection can be from this menu or by pressing the ESC key which accesses the Set Font... option. This is quicker if you have more than four fonts installed as they are all available directly.

Underlining and justification control in Calligrapher is superb and even intra-word justification can be controlled by selecting the DISPLAY option.

Underlining can be set to omit numbers, spaces, punctuation or nothing. You seldom find this degree of control in a word processor on the ST - especially one at this price! Search and replace facilities are another revelation. In addition to the usual case sensitivity, it is possible to include style codes, justification, rulers, etc. This brings a whole new range of possibilities to what can be achieved with search and replace. In addition to the usual Find Next option there is a Find Last option, which I have found to be surprisingly useful.

Block handling is carried out in the normal manner by dragging the mouse to define the block. Unlike First Word Plus, however, reaching the bottom of the page does not stop you - the page scrolls downwards with you. Large blocks can also be defined by setting start and end in the normal manner. A menu option MARK ALL is also provided. If the cursor is inside a block, typing will result in the block being overwritten as you type. The usual system of CUT, PASTE, COPY etc is implemented in Calligrapher.

Case changes are well covered in Calligrapher. CTRL S reverses the case of any letter while CTRL U and CTRL L will convert to upper and lower case respectively.

CTRL X will exchange adjacent characters for those occasions when your typing has put "teh" instead of "the". Double clicking on a work marks it and pressing the DELETE key will delete it. Once again these operations are very Mac-like. Calligrapher offers the powerful and very unusual option of multiple column text. Unlike some other word processors which have this facility, Calligrapher shows columns on screen and movement within columns is well arranged with simple keystrokes as alternatives to mouse control. Movement through a document is well implemented with keyboard strokes to move by character, word, line, paragraph or screen.

Headers and footers are universal to all word processors but as usual Calligrapher goes slightly further by offering the option of Roman numerals as well as numbers. These footers and headers can be placed at any position in the line and in any size or font without affecting the body text. Paragraphs can be numbered in a similar manner and the date can be inserted as either fixed date or variable date. The latter option is only valid if you have a way of setting your ST's clock. If you haven't got this facility, one of the toolbox programs placed in the AUTO folder will take care of it for you.

Picture handling

Most word processors can import graphics but with Calligrapher you have far more options than usual. In addition to the usual import .GEM and .IMG file option, you can also import Degas and Neochrome files using one of the supplied PAKS. .IMG files can be cropped, dithered and a variety of enhancements applied before you finally place them in your document. Be warned: I managed to eat 210K with one graphic file - not possible if you own a 520ST! Text can be imported from other word processors as ASCII or directly if from First Word Plus. Such files retain all their style and page settings. Working Title are well aware of how popular this processor is!

The spelling checker is on the slow side (to put it politely) as the majority of it is held on disc even if you are using a 1040. Direct checking as you type is available, but unless you have a hard disc be prepared for a lot of disc activity and the screen getting behind your typing even at my speeds. Dictionary maintenance is well handled and you can create your own user dictionaries.

Dictionaries for French, German, Italian and Spanish are available at £18 each.

Probably the jewel in the crown of this pack is the thesaurus. It is a 200,000 synonym thesaurus and is a remarkable inclusion in a £69 package. Accessed from the PAK menu or by pressing F10, the thesaurus disc is requested and the main screen is displayed.

Synonyms include different participles where appropriate and usually antonyms are given. This thesaurus is very fast and a delight to use. The only limitation is that you must have a 1MB drive.

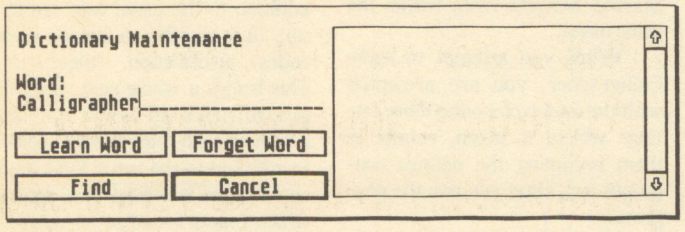
All said and done, what really matters at the end of the day is the quality of the hard copy. Before you commit your work to paper, you can use the PREVIEW option to view the whole page. You can view one, two or eight pages at a time using this facility, particularly useful when you have a lot of graphics on different pages and want them to be aligned on the different pages. You can print from memory or from disc and invoking the PRINT option gives comprehensive control of the final output.

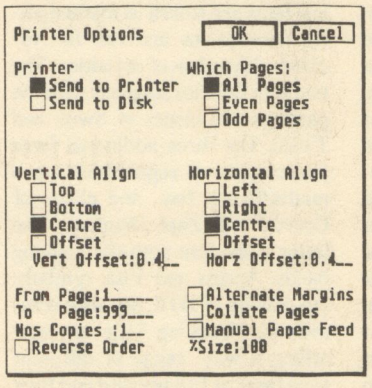
The final output is superb. I have tried it on an LC10 and had trouble convincing friends that it had not come from a 24-pin printer. Output using a Star or NEC 24-pin gave even better results. Using a bubble jet gives unbelievable quality and I would love to see the results from a laser. The only output I have seen which rivals it comes from Signum 2, and the quality of the enlarged fonts from Calligrapher outshine even that famed output.

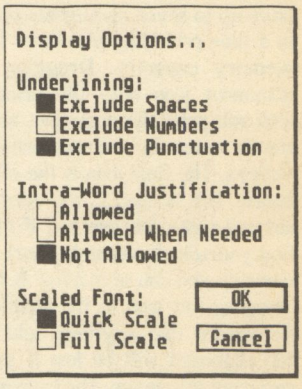
What about the differences between the Professional and Junior versions? Basically, the Professional version has an ART menu, Boxes, Outliner, Make table, Make formula, Tags and Mail merge. For more information on these features I refer you to the review of the Professional version in issue 4 of ST Applications. If you buy Junior and then decide to upgrade, the cost is £70 for registered users only.

For those people about to buy their first word processor for the ST, I really can't see a better buy in the sub £100 market. Junior is the best featured processor and will certainly cause quite a stir now that it is available. The main competition is the ageing First Word Plus which is considerably less well featured than Calligrapher Junior and is lacking a thesaurus. Write On and Word Flair can also be considered as contenders but I don't think they are in the same league.

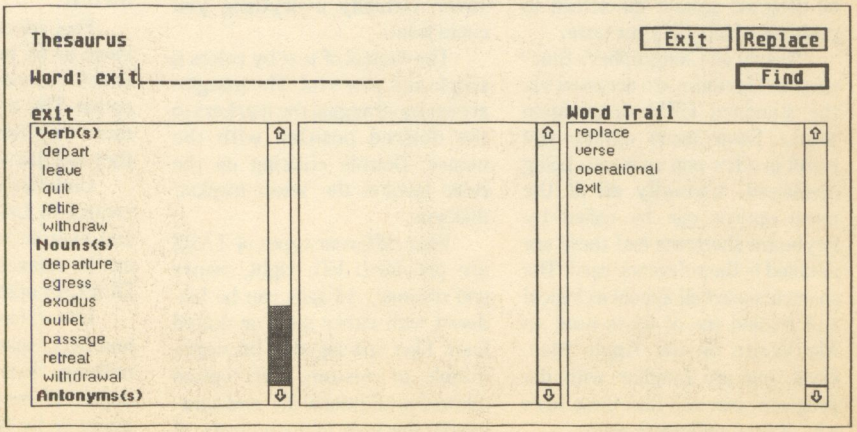
The vast majority of word processor users will find that Calligrapher Junior does all they will ever need (and probably more) and for those who require the extras I recommend the Professional version.







Product:.....Calligrapher Junior
Version:..... 2.25
Supplier:.....Working Title
PO Box 4
Eynsham
Witny
Oxford
OX8 1UD
Tel:..... 0865 883592
Price:..... £69.00
Manifest:..... 3 s/s discs, 264-page ring bound manual; 3 further discs supplied on registration
System:..... Any ST, med/high resolution; G+Plus (supplied) installed



New fonts you can afford

Albanian Afrikaans Amharic Armenian Arabic Assamese Azerbaijani Bihari Byelorussian Chinese Chuang Czech Danish Dzongkha English Esperanto Estonian Farsi Finnish French German Georgian Greek Gujarati Hebrew Hindi Hiragana Hungarian Icelandic Irish Italian Kanji Kashmiri Katekana Kazakh Khasi Kirghiz Kurdish Ladakhi Latvian Lithuanian Malaysian Manipuri Marathi Mizo Moldavian Mongolian Naga Nepali Norwegian Old Cyrillic Polish Portuguese Punjabi Pushto Rajasthani Russian Sanskrit Serbian Serbo-Croat Sindhi Slovene Slovak Spanish Swedish Tajik Tamil Tibetan Tigrinia Turkmen Uighur Ukranian Urdu Uzbek Vedic Vietnamese

EFF Albert £7-50 EFF ARCADIA £7-50 EFF Ascot Script £7-50 EFF Ben Set £9-95 Ben **Ben Bold** EFF Church £7-50 EFF English Set 1 £19-95 English *English Oblique* **English Bold** ***English Bold Oblique*** EFF English Set 2 £19-95 English Light *English Light Oblique* **English Ultra** ***English Ultra Oblique*** EFF Euronarrow Set 1 £19-95 Euronarrow *Euronarrow Oblique* **Euronarrow Bold** ***Euronarrow Bold Oblique*** EFF Euronarrow Set 2 £19-95 Euronarrow Light *Euronarrow Light Oblique* **Euronarrow Ultra** ***Euronarrow Ultra Oblique*** EFF Eve Open £7-50 EFF Liz 7-50 EFF Calamus Antiqua Set £9-95 Calamus Antiqua Calamus Antiqua Bold

You no longer need to break the bank to get the right text effect. We have these and many more professional quality fonts for Calamus, PageStream, GDOS, Thats Write, Write On, PostScript and Windows 3 together with all hardware and software for DTP and Design on STs and PC compatibles. Prices exclude VAT. Phone for complete catalogue.

Gate Seven Computers Ltd 6A Gwendwr Road London W14 9BG ☎ 071-602 5186

ST Internals

Part 8 of Paul Rossiter's series on the hardware resident in your ST takes a look at the central processor of the ST series: the 68000. This chip is the heart of the computer, and without this not much gets done.

The 68000 was designed by Motorola and was the successor to the 8-bit 6809 (as used in the Dragon). The first 68000 was launched way back in 1979 when it cost around £300, compared with less than £5 now. The early devices ran at a clock speed of 8MHz; even now the fastest 68000 is 16MHz and then only from SGS or Toshiba - not from Motorola.

The 68000 is a 16-bit wide processor with a 24-bit address bus allowing direct linear access to 8 Megawords or 16 Megabytes of memory - no crude 64KB segments as with Intel 8086 processors. Incidentally, the 68000 is made from roughly 68000 transistors.

The 68000 has a little brother, the 68008, which has a cut down address bus that only allows 1MB and only 8 bits of data. This cheaper version was used in the ill-fated but excellently conceived Sinclair QL. Incidentally, the QL emulator for the ST is alive and well and used by many ST owners: it offers more speed, memory and proper disc drives.

A 64-pin DIL package holds the 68000 and the old ones are fabricated in an NMOS process - if fitting an accelerator, ensure a CMOS processor is used. Nowadays the 68000 can be obtained in a square 68-pin PLCC package and as such is employed in the ST-E in a suitable socket.

After the 68000 came the 68010, 020, 030 and now the 68040. The only one of interest to us is the 68030 as it is used in the TT.

The Motorola design is far superior to the Intel 80xxx series but thanks to IBM and their influence the 68000 has largely fallen from favour - think what it would be like if only IBM had chosen it instead of the 8088! Apparently, the main reason for choosing the 8088 was that 68000 code is verbose and in those days RAM was very expensive - the first IBM had 16KB and a cassette drive. The main users of the 68000 were Apple (now turning to IBM RISC), Sun (turned to SPARC), laser printers and, of course, Atari and Commodore in their low cost micros.

68000 Details

The 68000 is a very complex chip which would need a large book to describe fully. This article is only intended to give a basic overview of the chip, and readers desperate for more knowledge will have to go to their local technical library.

The pinout of the DIL and PLCC versions is shown in Fig 1. The pins can be split into 9 parts:

1 Address Lines

The address registers (7 of them) are all a full 32 bits wide. The outside world only sees 24 bits as A1 through A23. This gives an addressing range of 8 Megawords or 16 Megabytes. The address lines are tri-state lines with 10K pull up resistors on each line. During an interrupt the level to be serviced is placed on address lines A1 to A3.

2 Data Lines

The 68000 provides 16 data lines called D0 through D15. This allows byte (8-bit) access or word (16-bit) access: note that all word accesses MUST be to an even address. The data lines as with the address lines can go tri-state (effectively become disconnected) to allow other devices (DMA/Blitter) to take over the busses for their own purposes.

3 Bus control - asynchronous

The 68000 can control both synchronous and asynchronous devices. Asynchronous devices can take whatever time they wish to perform, sending signals back when finished. The lines provided are

R/W	read write to bus device
AS	address strobe
UDS	to allow byte access - Upper Data Strobe
LDS	as UDS - Lower Data Strobe
DTACK	data acknowledge - error if low for >64 clock cycles

4 Synchronous bus control

VMA	Valid memory address
VPA	Valid peripheral address
E	Enable 800KHz to peripherals

5 DMA Control

When the DMA (Direct Memory Access) is active the 68000 goes to 'sleep'. The DMA device asserts BR (Bus Request), the 68000 asserts BG (Bus Grant) when it is safe to do so. The DMA device then takes control of the busses until the transfer is complete and then sends BGACK (Bus Grant Acknowledge).

6 Interrupts

Interrupts or exceptions are notified to the 68000 on the lines IPL0 - 2. The ST only uses IPL1 and 2. The interrupts are serviced from vector tables held low down in RAM, and the actual interrupt service routines are held in normal system ROM.

7 FC Bits

The 68000 has two distinct modes of operation: supervisor which can perform any operation without checking, and user mode. User mode memory accesses are verified first to ensure the program is keeping to its proper area - this is a crude form of memory protection - each mode having its own separate stack. There are three lines, FC0-2, which are used to indicate whether the 68000 is in supervisor or user mode and if there are any interrupts to acknowledge.

8 System Control

CLK	Clock input, a square wave of 8MHz
RESET	taken low for at least 100mS at power on time. The 68000 can provide a pulse here upon command to reset external devices
HALT	if this line goes low the CPU has halted - a major error
BERR	this line is from the GLUE and usually signifies a buss error such as writing to ROM etc.

9 Power

The chip is powered through the +5V and 0V pins as usual.

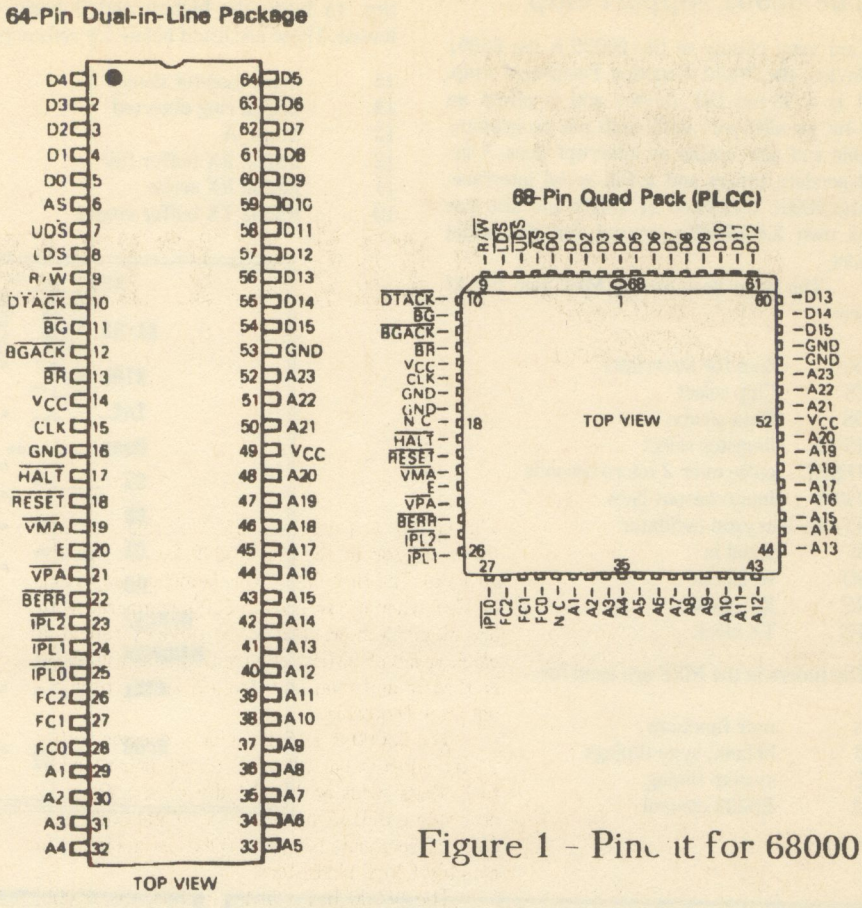


Figure 1 - Pinout for 68000

The Reboot Sequence

When the ST is powered up the 68000 is given a pulse on its RESET and HALT lines. This causes the 68000 to perform its built-in boot routine which ALL 68000s do.

It first goes to vector zero (address $000000) and loads the value there into its SSP (Supervisor Stack Pointer). It then loads in the contents of vector one (address $000004 value $FC0000) into the PC (Program Counter). The 68000 then jumps to the value held in the PC and begins execution of machine-specific code in the operating system ROM.

As the main RAM goes from $000000 upwards you may wonder how the reset vector code is present. Simple: the lower 2K of RAM is for supervisor access only and the lowest bytes are actually hardwired and held in the GLUE chip. It is this information that is read and not that of the volatile RAM.

Vroom Vroom

It seems to be a desire of computer owners to wring out every last drop of performance from their machines - rather like car owners. Most of the time the CPU is idle but it can still feel terribly slow sometimes.

In order to try and boost things a little there are software patches - Quick ST, NVDI, Turbo ST, disk caches, etc. There are hardware enhancements such as a blitter but none has the same appeal as a processor accelerator!

The easiest way to accelerate is to just ramp up the 68000, the Hypercache and the ICD ADSpeed being the most common examples of this. Simply adding a 16MHz processor will only give about 10% improvement as the rest of the system is tied to the old 8MHz speed. The two accelerators mentioned both have memory caches, a small static memory which is very fast. When data is read in from main memory it is also stored in the cache; if that word is required subsequently the cache is checked, and if available it is read in from the cache at full speed.

Memory writes are written back to main memory to avoid problems. It can be seen from this that the only things that run faster are repeated reads and internal calculations - expect about 70% on a program compilation and nearly 100% enhancement on a screen re-draw or spread sheet re-calculation. The caches used are usually 8-16KB. A larger cache will help give a better 'hit-rate' but the law of diminishing returns comes in. A 16KB cache will typically have a hit rate of 90%

For real power users a 68030 board can be fitted (Megas only). Here, of course, other problems arise. The 68030 has very slightly different code to the 68000 and as such the system ROM need changing. Still, the speed really does increase: a Mega running a Gadgets by Small 68030 board with its FastRam should knock spots off of a TT, owing mainly to the smaller screen area.

The Mega ST-E

It is very difficult to get precise details of the Mega ST-E but it is probably just an ST-E with an Atari built 16MHz processor with some cache - apparently some of the IBM PC emulators will use this cache, thus providing them with a useful extra speed increase over the older models.

The TT

The TT uses a 68030 processor with a 68882 floating point co-processor. This assembly is run at 32MHz and is a very powerful setup. The 68030 is superior to the old 68000 in many ways: faster clock speed, wider data buss (32 bits), larger address space (32 bits or 4 Gigabytes), internal cache, more efficient micro code and hardware memory protection/management. As the TT matures, its performance should be better exploited with software to use the FPU apart from DynaCadd. (Prospero have just launched a TT Fortran which is five times faster.) NVDI and Quick ST3 will also help the situation.

If the much rumoured TT/Unix box appears with a large hard disc and running X Windows it could sell thousands at a competitive price. The arrival of the much-rumoured multi-tasking TOS will also help substantially.

The 68901 support chip

Tied very closely to the 68000 is the 68901 device, the 'Multi Function Peripheral' chip. It is a 48-pin DIL device and it offers an 8-bit parallel port with each pin programmable and also usable as interrupt lines, 4 independent timers and a full serial interface. The 68901 is clocked at 4MHz and also has its own 2.4567MHz crystal for the serial port.

The main lines on the MFP (see Fig 2) are:

D0-7	lines for interrupts
CS	Chip select
DS	Data strobe
RS1-5	Register select
RESET	pulse over 2 micro seconds
IO0-7	Input/output lines
XTAL1-2	crystal oscillator
SI	serial in
SO	serial out
RC	RX clock
TC	TX clock

The timers in the MFP are used for:

A	user functions
B	hblank, sync timings
C	system timing
D	RS232 control

The interrupts in the ST are given 16 priorities, 15 being the highest and 0 being the lowest. These are listed below for reference:

15	mono monitor detect
14	RS232 ring detected
13	Timer A
12	RS232 RX buffer full
11	RS232 RX error
10	RS232 TX buffer empty
9	RS232 TX error
8	Horiz blank
7	Disc drive
6	Keybrd/MIDI
5	Timer C
4	RS232 baud generator
3	GPU done
2	RS232 CTS
1	RS232 CD
0	Parallel port busy

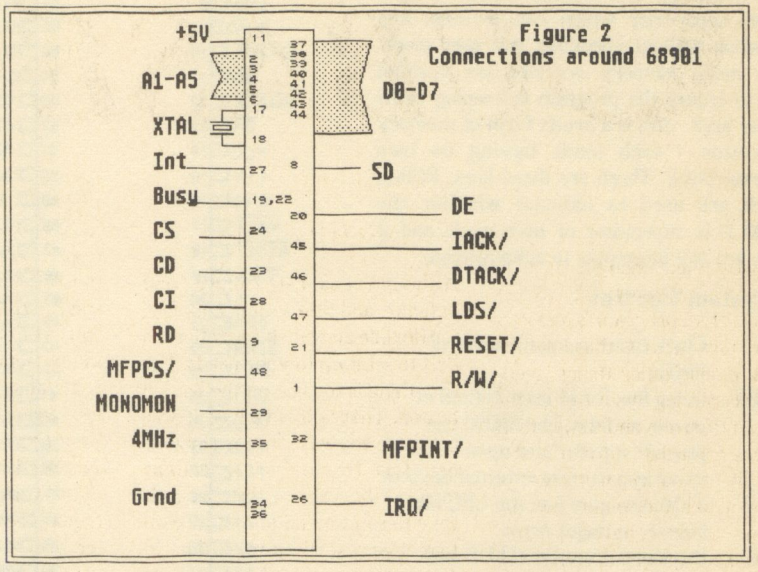


Figure 2
Connections around 68901

C & P Rossiter

For all your ST hardware needs, ask the experts.

Best prices and service on memory upgrades and repairs.

Repairs from £25

Upgrades from £25

Plus blitters, TOS 1.4, emulators, clocks, scanners and the famous printer booster only £25

Please phone or write to:-

C & P Rossiter

48 Park Drive, Hucknall, Notts.

NG15 7LU

☎ (0602) 631631

"Congratulations on the prompt and courteous way you have dealt with my requirements"

G Doodson June 1991

Timeworks DTP User Guide

A comprehensive guide to Timeworks DTP

This book covers a lot of ground: from the basics of getting started (installation and loading), it works its way through all the various features of this versatile desktop publisher, setting out the operations in easy-to-follow step-by-step instructions with plenty of examples, both graphic and textual, throughout. There are two chapters on typefaces: one on how to install them and the other on how to design your own.

Cost: £9.95 from the ST Club

New Calamus DTP Bureau

*FREE introductory offer**

*Buy one, get one free!. For your first job with us, we'll give you one free bromide for each one you pay for. Ring us now! *Offer closes 31/12/91*

- *A4/A3 film/bromide output 1200-3000 dpi*
- *Complete professionally-run bureau service*
- *Fast modem link for rush work*

Sumner Type, Unit 19, 82 Sumner Road, London SE15 6LA
Phone: 071-703 4189 Fax: 071-708 5754

Getting to grips with CUBASE

Part 5

One of Cubase's freebies is an accessory called Satellite. Ofir Gal shows how it may be used to best effect.

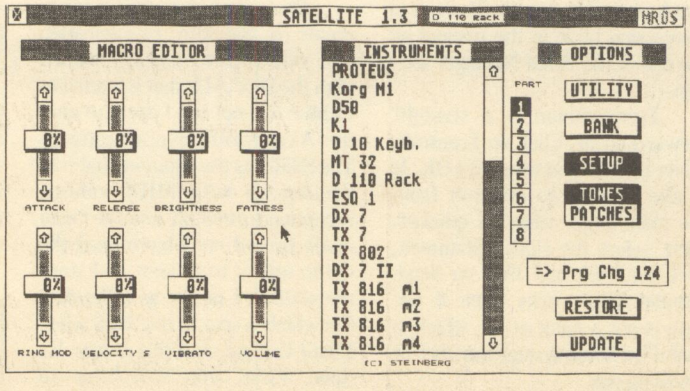
Briefly mentioned in issue 8, Satellite (currently V1.3) is another free program/accessory that comes with Cubase which allows, among other things, sending and receiving Sysex dumps to/from synthesizers and samplers. It features a macro editor that lets you edit the basic parameters of your synths if the sounds you are sending were created with a Synthworks program, otherwise all you can do is to send whole banks or individual patches/voices. Some third party companies like Newtronic offer voice banks in the Satellite format. The great advantage of these over other formats is the ability to load a whole bank into Satellite, and then send only the sounds you require from that bank to the synthesizer, making it possible to compile a "Best Of" bank with your favourite sounds and also do a bit of editing and customising of sounds to suit your needs. You can load voice banks of other formats into Satellite, as long as they are pure Sysex dumps. If a bank you have acquired on disk will not load into Satellite, there is a way around it. First send the bank to your synth following the instructions provided, then load Satellite and send the bank back from the synth into Satellite using the Dump Utility facility. Once received it can be saved to disk. Next time you need those sounds, you can load them directly into Satellite.

Satellite lets you create a customised set-up to fit your synths, RAM, hardware devices, bank formats, etc., and as it is an MROS program it can be loaded as a program under Switcher by simply changing its name extension from ACC to PRG. Either way it can communicate with Cubase in a similar way to the synth editors described above.

Setting it up

Although you can simply load Satellite and use it immediately, for flexible and quick operation it's best to set it up to your needs. The first thing is to click on the Set Up button. That will reveal (if it was not there anyway) the instruments list; feel free to erase and/or modify the existing list, as it is easy to reset it and the set up contains a very small number of parameters that would not suit your set up anyway.

Clicking on the first instrument name with the left mouse button will reveal the instrument set up box. You can name the synthesizer, set the output if you have a Midex or other devices connected, set the MIDI channel and the device ID which must match with the settings on your synth. You can also define a path, which is where Satellite will look for banks on disk. This is of use mainly with a hard disk, but you could define a folder for each synth, which will make life a bit easier when you have accumulated a large number of banks. The MIDI Thru is only useful if you load Satellite without Cubase, it will let you play your master keyboard and will route the MIDI output to the selected synth. You must set the Synthworks box as well. If you are going to use Synthworks banks for that particular synth, you should set this accordingly. There is also a Free Sysex option, which is what you need if you do not have any Synthworks banks for that synth. If you need both settings you will have to set the same instrument twice, and for convenience name the one with the Free Sysex option Proteus Free or similar. When finished click Confirm which will exit and return to the main page with that instrument selected. A quicker way to select an instrument once it has been defined is to click on its name with the right mouse button. To load a bank you simply click on Bank and then Load. If the instrument was defined to load Synthworks banks, a list of all the voices in the bank will appear, each is then sent to the synth by clicking on it. On the other hand, if it has been defined as a Free Sysex instrument, the whole bank must be sent to the synthesizer as Satellite 'has no idea' of how the loaded file is constructed, where one sound ends and the data for the next one starts, etc.

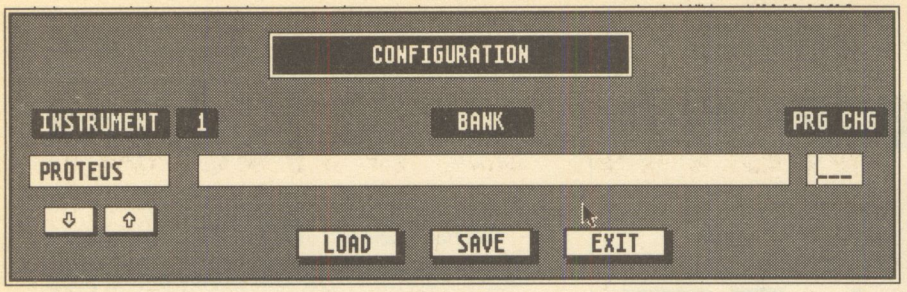


Creating a customised set-up to fit your synths, RAM, hardware devices, bank formats, etc.

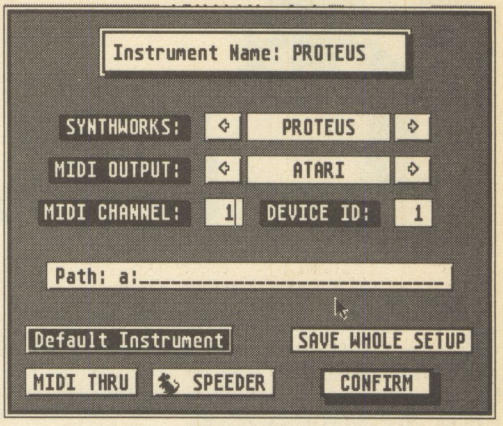
Once you have defined all the required instruments, click on Save Whole Setup. Next time Satellite is loaded, either as a program or an accessory, your customised setup will be loaded with it. All Satellite settings are saved under the file name Satellite.Set. This file contains a few more parameters like the dump request messages specified in the Dump Utility sub page.

To access the dump utility click on Utility, which will reveal a menu where you can select the Dump Utility. The dump utility works in two basic modes. One will have it ready to receive a dump, which must be manually sent from the synthesizer. The Send Request mode allows you to send a special sysex code to the synth, which on receipt will send the required information back to Satellite. Note that it is always sent to the selected instrument in the main page, regardless of what appears in the box under the Send Request button. Also note that when Satellite is receiving the data in either modes, a byte counter appears at the top left of the Dump Utility box. If that does not appear to be counting, you have forgotten to rearrange the MIDI leads and/or set the synth to send/receive sysex. The Roland D10 and D20, for example, must be set manually to receive sysex every time, while their rack-mounted brother, the D110, need not. Once the dump has been received by Satellite it can be saved to disk by clicking on the left mouse button; the standard file selector will appear and you can name the dump.

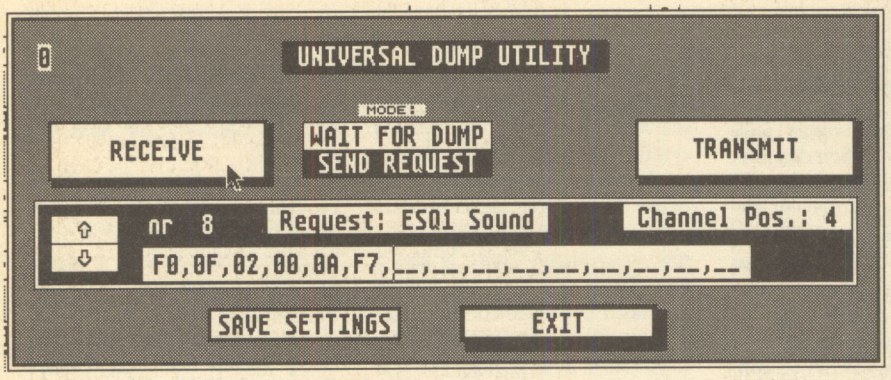
By the very nature of sysex data, each synth will require a different dump request, and some



A Satellite configuration may be created that will be loaded automatically with DEF.ALL on boot-up.



The Instrument Set Up box is revealed by clicking on the first instrument name with the left mouse button. Synthesizer, output, MIDI channel and device ID can be named, along with a path where Satellite will look for banks on disk.



Clicking on Utility reveals a menu that allows the selection of the Dump Utility.

synths respond to a whole variety of dump requests. For this example I used the quite popular and very flexible Oberheim Matrix 1000.

You can define 32 different requests in Satellite, and name each one. Steinberg provide a few with the program, but you can easily define more. In the case of the Matrix 1000 there are four possibilities. To request all patches in current bank (the one selected on the Matrix itself), simply write the following code into the request line:

```
F0      Start of sysex code
10      Oberheim ID
06      Matrix ID
04      Matrix request code
00      All patches and master
        parameters (transpose,
        fine tune, etc.)
00
F7      EOX (End of sysex)
```

To get the master parameters type - F0, 10, 06, 04, 03, 00, F7.

Sometimes I use the MIDI Manager map that is provided on disk #2 of Cubase, to edit the sounds on the Matrix 1000. This is highly recommended, especially as the Matrix is a presets machine and can not be edited from its front panel. Editing the sounds will unleash the great possibilities it offers. Try the Matrix Modulations, you won't be sorry... The problem is saving the result of an editing session without having to erase one of the presets. Fortunately it's possible to request the Matrix to send the contents of its edit buffer to Satellite by sending the following code -F0, 10, 06, 04, 04, 00, F7.

To request a single patch from current bank -F0, 10, 06, 04, 01, <patch number>, F7. Note that as all values are in HEX, you should always remember to convert the patch number, otherwise you will be receiving the wrong patch or nothing at all. There is a conversion table in the manual at the end of the MIDI Manager section.

Transmission is a straight forward affair. Click on Transmit, select the file you need and OK. It is also possible to transmit from the main page, which is quicker. First, select the right instrument, click on Bank and then on Send. Simple! This works even if the data is not a bank at all, which is useful for sending single patches or anything else.

To find the request codes and other sysex information you will have to look through the very small print normally found at the end of a synth/sampler manual. Unfortunately, Satellite gives no indication as to whether or not a complete dump has been received, so if in any doubt try increasing the buffer size (found in the Bank sub menu).

Total Recall

One of the advantages of running Satellite in conjunction with Cubase is the ability to patch data from Satellite to Cubase. A nice touch is the total recall function which allows automatic transmission of sysex data from Satellite when loading a song to Cubase.

One use of these feature is to create a Satellite configuration that will be automatically loaded with the DEF.ALL that is loaded to Cubase on boot-up. I use it to send the Akai S950's overall settings. The S950 has the annoying habit of booting up with MIDI volume reception turned off and the Omni mode turned on. I have used the dump utility to request and store the settings I prefer as a Satellite file which is sent to the S950 when I load Cubase, and this is how it's done. First, you will have to request the settings from the S950/S900, the request message is F0, 47, 00, 01, 40, 00, 00, F7. The data received is 89 bytes long and should be saved to disk.

In the Utility menu, under Configuration, you will find Edit. A click on Edit will take you to the configuration edit page, there you can scroll through your instruments and by clicking on the blank bar, you can select the file you wish to auto-load. When you're done, click on save. Back in the main page, click on Join Configuration in the Utility menu. This patches the selected configuration to the resident song in Cubase which must be saved now. Next time it is loaded, (if Satellite is resident) the configuration and related files will be loaded and sent to your synths and sampler. This can be done manually by selecting Total Recall in the Utility menu.

Satellite is a powerful program in its own right, with plenty for the MIDI hacker to explore. I do hope this article will help you use it to the fullest. Any questions and ideas are welcome and should be sent to -

Ofir Gal
Cubase/ST Applications
22 Rodway Road
Bromley
Kent BR1 3JH

In the Public Domain

Sandra Vogel casts a critical eye over some public domain offerings.

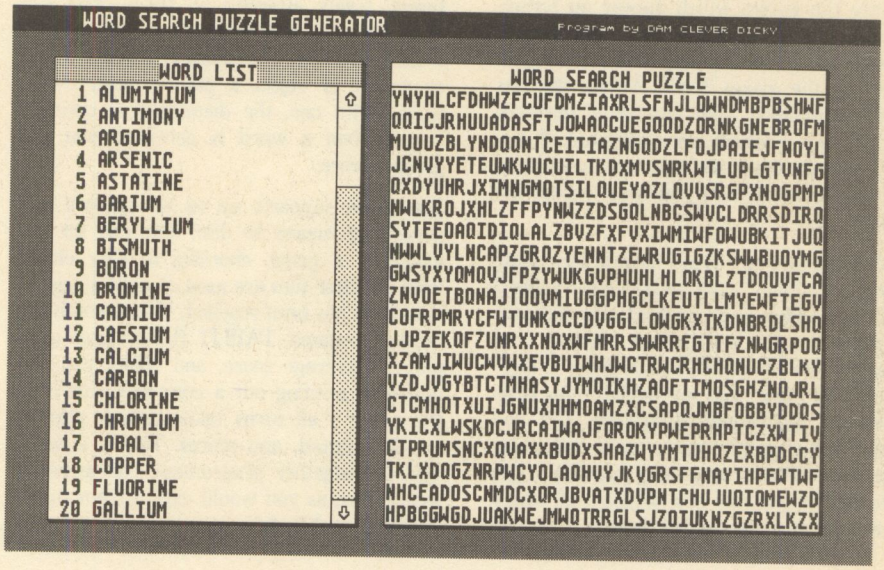
Kaosdesk

South West Software Library 1736

KAOS is yet another desktop replacement à la Neodesk and Harlekin. This one hails from Germany, and has been partially translated for English users. You will find that all the main menu options are in English, but some of the alert boxes remain in German. I don't think this will present too many problems, though the partially translated manual might. Like all programmes which try to change something fundamental about the ST, a good manual is essential. Translation of the manual is in progress, however, and the version I used for this review was well on the way to standard English.

The programme itself makes use of many of the features we have come to expect from desktop replacements. It supports a variety of display formats for disk contents, including different sized texts and the choice of showing or not creation date and time, and file size. You can also 'display as icons', over 600 files at once, and yes, there is an icon editor. Displays are automatically formatted to use only the visible window space, which means that the horizontal scroll bar is redundant. This feature remains, however, and what is normally the 'move' portion is now a graphic representation of free disc space. Clicking on it tells you exactly how much space is free.

You can run programmes directly from the desktop, and send files to your printer (whose icon is on the desktop) by dragging them there. You can copy disks from the desktop to make backups, and there is a nice 'select all' option under the File menu. You can set a mask under the Sort option to exclude certain types of file from the display, and this can also be used to select, for example, all .DOC files at a keystroke.



There are a million and one other things KAOSDESK can do, and unlike the commercial Neodesk, this one loads in a flash, and is relatively easy to get to grips with. If you are thinking that the ST desktop is bog standard, and would like a change, KAOSDESK should be near the top of your list of alternatives.

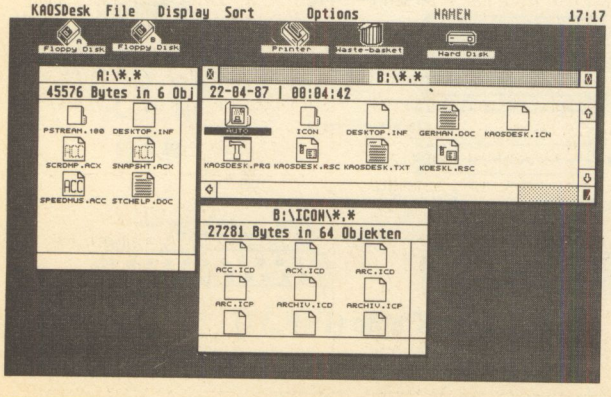
Word Search Puzzle Generator

South West Software Library 1649

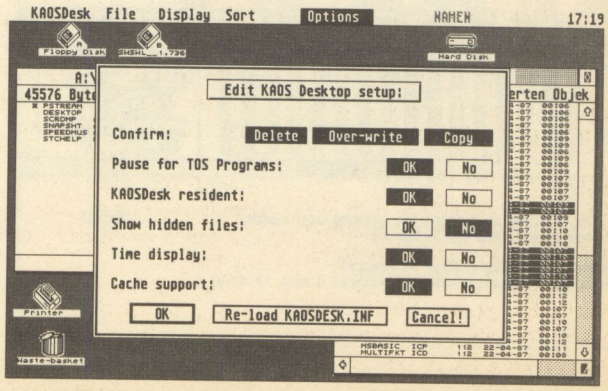
For those of you who like running competitions, or are just fascinated with words, this is an excellent programme. It simply generates those wordsearch puzzles that some people become addicted to. Unfortunately, the programme does not come with a manual, but it is entirely menu driven, and although the menus themselves have a very individual (not to say colourful) look and feel, they are very easy to get the hang of.

You can input up to 100 words in your list, which is shown in the left hand half of the screen. You can sort the list alphabetically at any time to check what you have included. The right hand half of the screen is dominated by a display of the word search puzzle you are creating. The computer searches for a place to locate the words you enter, and slots them in before your very eyes.

When you are happy with your creation, first save it to disk. Then you can print out the puzzle, with a title line, a credit to the creator, and the list of words to find. You can also print a crib sheet containing the solution. There are a variety of graphics options for on screen display, and a number of printer options too. This is a well implemented, fast and reliable programme. I can see club mags all over the country being overrun with word puzzles!!



KaosDesk


KAOSDesk File Display Sort Options NAMEN 17:19
Edit KAOS Desktop setup:
Confirm: Delete Over-write Copy
Pause for TOS Programs: OK No
KAOSDesk resident: OK No
Show hidden files: OK No
Time display: OK No
Cache support: OK No
OK Re-load KAOSDESK.INF Cancel!

Stos Typing Tutor

Floppyshop UTL334

This typing tutor, as its name suggests, was written using STOS by 17 year old Richard Gale. Its aim is simply to get you to copy-type text which appears on screen. There are a variety of different typing tests for you to try. At the most basic level, you can follow a set of 'lessons' on screen. These are loaded from disk, and you are required to copy exactly the letters which appear on screen. As with any typing tutor, you learn groups of letters at a time, so the first test concentrates on the group 'ferdt'. When the test page is completed, your number of mistakes and words per minute are calculated. If you are inside the limits set, you can move on to the next lesson. If not, you must repeat the lesson.

More advanced test types include practicing typing (on a blank work area), copy-typing a .DOC file which you can load into the programme (again words per minute and accuracy are checked), and running a keyboard test, where you are asked to hit keys which are highlighted at random. Get one wrong and a rather nasty noise emanates from your ST! The only thing you do not get with this programme is a diagram of which fingers to use for which letters - a sad omission to an otherwise very friendly and usable programme.

Tablit II

Budgie Licenseware

Tablit II is a word game based on the Scrabble theme, but instead of placing words on a board, crossword style, you lay them along a horizontal playing area. As in Scrabble, you are given a random selection of letters to play with, and different letters have different points attached to them. You can choose to play with or without a dictionary loaded. Without a dictionary, you are asked to accept or reject a played word every time. With one, the dictionary is checked first. When a word is accepted you are given a score.

The game supports up to six players and saves high scores to disc. You can set the length of a game, choosing to play either until all letter tiles are used or until a pre-set time limit has been reached. When you have finished a game, TABLIT H calculates each player's average score, and offers you the option of printing out a complete record of the game - all turns taken, words placed, words rejected, and scores. This is a very well put together programme, educative as well as fun, as you would expect from Andy Osbourne and Budgie.

Spanish Verb Tutor

Public Dominator A212

The Spanish Verb Tutor is truly an international programme. Apart from the obvious fact that it is a foreign language tutor, you can select to use it in French, German, Spanish or English. The Tutor is menu driven, and very easy to use. You can either plunge straight into the verb tutor, or get some introductory information about the structure of the Spanish language, its historical development, etc.

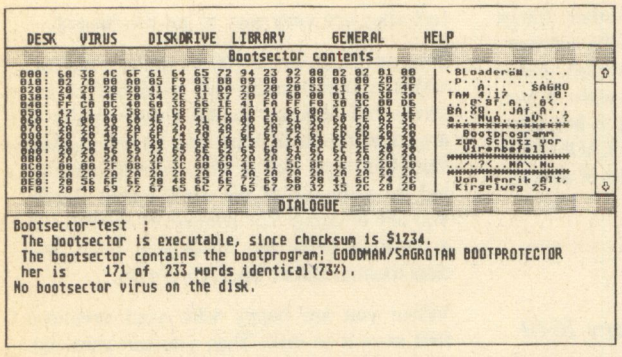
The essence of the programme is that it declines a tense of a verb, gives you time to study it, and then asks you questions which have multiple choice answers. Points are scored for correct answers, and your average score is calculated after each 'round'.

Quite nicely implemented, and very easy to use, the only thing you won't get help with is pronunciation!

Cartoon Time

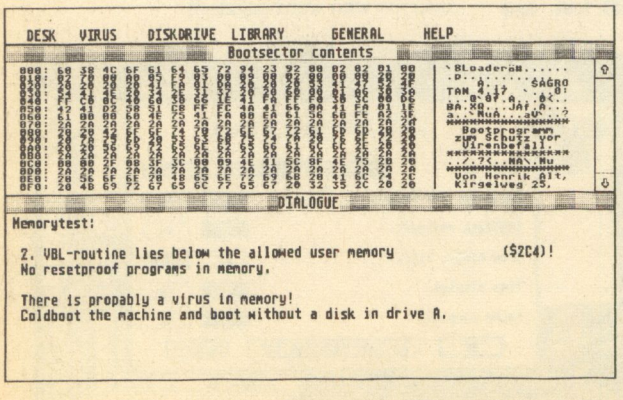
South West Software Library 1753

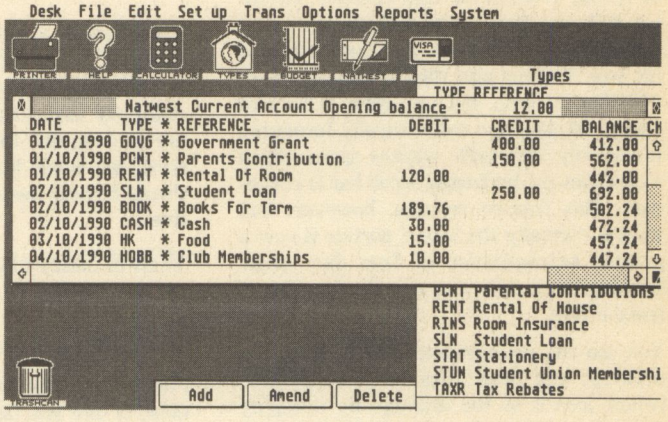
This programme is a piece of pure indulgence, but I recommend you give it a look nonetheless. If you like Tom and Jerry, load this programme, sit back and watch. You will not be disappointed.


DESK VIRUS DISKDRIVE LIBRARY GENERAL HELP
Bootsector contents
DIALOGUE
Bootsector-test :
The bootsector is executable, since checksum is $1234.
The bootsector contains the bootprogram: GOODMAN/SAGROTAN BOOTPROTECTOR
her is 171 of 233 words identical(73%).
No bootsector virus on the disk.

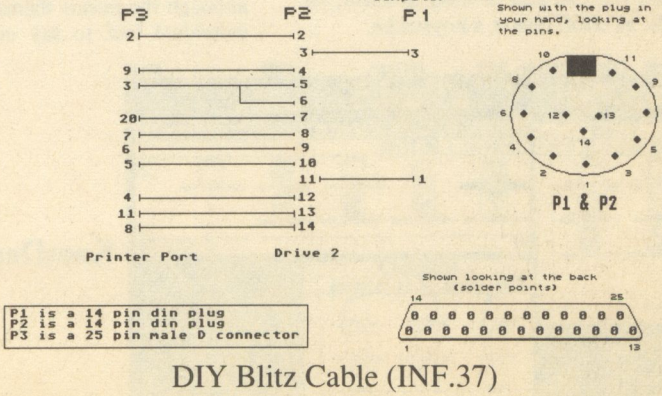
Above and below:

Sagrotan v4.14, English version of the standard German virus protection package, on disk UTI.176.


DESK VIRUS DISKDRIVE LIBRARY GENERAL HELP
Bootsector contents
DIALOGUE
Memorytest:
2. VBL-routine lies below the allowed user memory ($2C4)!
No resetproof programs in memory.
There is propably a virus in memory!
Coldboot the machine and boot without a disk in drive A.


Desk File Edit Set up Trans Options Reports System
Types
Natwest Current Account Opening balance : 12.00
DATE TYPE * REFERENCE DEBIT CREDIT BALANCE
01/10/1990 GOVG * Government Grant 400.00 412.00
01/10/1990 PCNT * Parents Contribution 150.00 562.00
01/10/1990 RENT * Rental Of Room 120.00 442.00
02/10/1990 SLN * Student Loan 250.00 692.00
02/10/1990 BOOK * Books For Term 189.76 502.24
02/10/1990 CASH * Cash 30.00 472.24
03/10/1990 MK * Food 15.00 457.24
04/10/1990 HOBB * Club Memberships 10.00 447.24
RENT Rental Of House
RINS Room Insurance
SLN Student Loan
STAT Stationery
STUN Student Union Membershi
TAXR Tax Rebates
Add
Amend
Delete

Home Accounts 2 demo on disk UTI.179.


Computer
P3
P2
P1
Printer Port
Drive 2
P1 is a 14 pin din plug
P2 is a 14 pin din plug
P3 is a 25 pin male D connector
Shown with the plug in your hand, looking at the pins.
P1 & P2
Shown looking at the back (solder points)

DIY Blitz Cable (INF.37)

UPDATE

Version 11.11 ~ December 1991

Information

INF.37: HARDWARE MODIFICATIONS: 5MGU4 - How to upgrade a 520 ST to 2.5MB or 4MB. Includes programs to test the upgrades; BLITRUPG - installing a Blitter chip into a Revision B ST motherboard plus illustrations; BLITZ - Details on constructing your own Blitz disk copier cable. Comes complete with illustrations and the Blitz software. Needs two disk drives; TOS14INS - guide to installing 6 chip set of TOS 1.4 ROMs into an ST with only 2 TOS ROM sockets; MEGA2TO4 - upgrade instructions for Mega 2 ST; MIDINET - How to Network two ST's through the Midi ports. Includes software; T16 - installing a Turbo 16 hardware accelerator board. Includes various utilities to allow the board to be turned on/off. (DS)

MGN.62: ST NEWS - Volume 6 Issue 2, August 1991 (the first Lustrum issue!). They're back! This issue of the best ever ST disk magazine features: the first ever solution to Magnetic Scrolls' "Wonderland"!; a real-time article covering the Delta Force International Coding Conference; lots of reviews: Gods, Lemmings, Llamatron and A Prehistoric Tale; the latest news on the field of culture - books, music and movies!; Religious Ecstasy - a visit to the plantiac factories; The hottest news topics from all around the Atari ST world; yet another exclusive issue of the sub-magazine JournaLynx; the hottest packer in an exclusive, even better ST News version; How to make your marriage work out!; the hottest scroll demo yet featured in any disk magazine! A total of 1032 kb of articles!

INI.53: INSIDE INFORMATION Issue 53: Disk based ST magazine from Australia (with lots of US input). ARTICLES: News on Gadgets SST, GEM 68K Developers Kit, FSM GDOS, AlberTT board, Zoomracks, 3D LCD, and more!; Drawing with Degas Elite; PD Chat; ATARI EUROPE - Atari is a household word in Europe (!?- Ed); ALWIN STUMPH Interview; TOS versions and bug fixes; Portfolio update. Reviews: CODEHEAD Utilities; Calamus and Dynacadd update; MIGRAPH COLOUR - Colour pictures with Migraph's scanner!; STENO and STALKER upgrades; CARDFILE - Address, phone, and appointment-book program; HYPERLINK - Multi media, object based, application generator; STEALTH - Communications package; ORDERPLUS - Useful program for business; LEXICOR - Online conference; GEOTUTOR - update reviewed; LYNX UPDATE; GRANDSLAM - Grammar checker. Hardware: ATW Update and Parallel processing; 1.44 Meg DRIVE - New floppy disk controller chip under development; FAST T-20 - Jim Allen's Turbo boards; JRI SIMM RAM - John Russel's SIMM RAM board for ST's; RAM UPGRADE - Ace member Keith Pickering on the trials and tribulations of upgrading the RAM in his ST; HOST ADAPTER - build your own hard drive; ST STEREO CART - Stero cartridge for the ST; JOPPA FAXMODEM - FAX machine and modem in one; CARTRIDGE FIX - D.I.Y. cartridge restrainer; TCB TRACKER - Sound sample player. GFA: GFA NET - Messages and code from the GFA Programmers INTERNATIONAL ECHO; NO HOLES - How to avoid "holes" appearing on the desktop after calling an accessory within a GFA program. Software: RAMLOAD - Loads selected files into your ramdisk at bootup; NO_HOLES - Compiled version to accompany the article. (DS)

INI.54: Inside Information Issue 54: Articles: News, PD REVIEWS; GADGETS ONLINE - The Gadgets team online; COMMANDMENTS - Programmers' guide from Codehead. Reviews: MULTIDESK - Multidesk Deluxe previewed; SILHOUETTE; MINIX - UNIX for the ST; PAGESTREAM 2.1 - Questions and Answers (Essential reading for all pageStream 2.1 fans - Ed.); HARDWARE: D.E.K.A. - IBM keyboard connector; ZAPS - Lightning strikes and power surges; ST BOOK - More info; DIGIFLY - For flight simulators; SM124 MOD - Enlarge your mono view; SOFTWARE: 68KtoGFA - Converts assembly language to GFA Basic code; DIGICOMP - Digicomposer and manual; NMGE_V10 - Eliminate GDOS errors; UFO - Ultimate File Organiser. (DS)

Languages

LAN.106: Standard Lisp: Reference-Counting Standard LISP Version 2.07 - Lisp interpreter that conforms to Standard LISP [3] in the most part and uses reference counting instead of mark and sweep garbage collection.

LAN.107: FFORTH: demo version of this Forth-83 compiler from Galactica. Lots of on-line Help, in German. (DS:G)

LAN.108: CAT - C Adventure Toolkit: - provide details of your adventure to CAT in a very high level language and it will be converted into C source code which can then be compiled, along with standard CAT C code, to produce a finished adventure! The code generated by CAT is portable and has been tested on Sozobon C; MWC; and LaserC on the ST, as well as TurboC on the PC.

Midi

MID.53: Cubase Demo - auto-running 'demo cum tutorial' animation for this top flight MIDI software. (DS:M:1Meg)

MID.54: LIVE Demo - Soft Arts new high-level MROS sequencer with styles and chord analysis - runs on a TT and may particularly appeal to guitarists. Demo is limited in that you can only load songs and some pages are not active. (DS:1Meg:M)

Demos of Geerdes Softworkstation MIDI software, from Germany and available in the UK from Newtronic. These programs offer multi-tasking sequencing and synth editing for STs with just 1Mbyte. (Other multi-tasking systems by Steinberg and C-Lab require a minimum of 2 Mbyte.)

MID.55: Geerdes Softworkstation demo for Roland U110.

MID.56: Geerdes Softworkstation demo for Roland U20, U220.

MID.57: Geerdes Softworkstation demo for Roland D5, D10, D20, D110, MT32.

MID.58: Geerdes Softworkstation demo for Roland D70.

MID.59: Geerdes Softworkstation demo for Korg M1.

MID.60: Geerdes Softworkstation demo for Korg M3/r.

MID.61: Geerdes Softworkstation demo for Kawai K4/r.

MID.62: Geerdes Softworkstation demo for Casio VZ.

MID.63: Geerdes Softworkstation demo for Yamaha SY77, TG77.

KEY

(M) - Runs in High Resolution Mono.

(C) - Runs in Medium or Low Resolution Colour.

(DS) - Double-Sided Disk

(1Meg) - Needs one megabyte of RAM.

(Not TOS1.6) - Will not run under TOS 1.6 (STe) or TOS 1.4 (most recent STFMs).

($) - source code included.

($C) - C language.

($ASM) Assembler.

Doubled Up: With the exception of a few specially formatted disks, all single-sided disks in this catalogue are now available on double-sided disks. Doubled-Up disks have a disk code in the format: AAA*NN. All PD disks are the same price - there is no surcharge for double-sided disks.

Copyright: To the best of our knowledge everything on the disks in this catalogue may be freely distributed. If you know otherwise please let us know and the offending software will be immediately withdrawn.

This catalogue is originated and copyright the ST Club.

© 1986, 1987, 1988, 1989, 1990, 1991 The ST Club, All rights reserved.

Ordering Details

Please note that we do not accept orders by credit card. Orders accompanied with a cheque or postal order are dispatched by 1st Class post on the day we receive them.

All PD disks are copied onto high quality disks from known manufacturers. The price you pay us for PD disks covers only the costs of acquisition, duplication, cataloguing and distribution.

Disk Prices

PD Disks: Standard and Doubled-Up disks.

	up to 6	7+
Non-Subscribers	£2.80	£2.50
Magazine Subscribers	£2.50	£2.25
Disk-Mag Subscribers	£2.35	£2.05

Licenseware disks cost £2.95 or £3.95 each.

All prices include VAT, packing and 1st Class post.

The Order Form for these disks is on Page 57

Printer Support

PTR.14: Laserjet Utilities: ENVELOPE - Desk accessory envelope printing utility; CAMELOT and CANDY - Downloadable soft fonts; HP DUMP - Screen dumping utility. Uses Alt-Help; JET LABEL - Label printing utility; LASERJET - Printer driver and configurer; PRETTY PRINT - Prints out text files using soft fonts; HP CONTROL - LaserJet set-up program.

Slide Shows

SSC.78: Rob Williams SPC Slide Show 1: Pictures digitised from fantasy/RPG illustrations. The subjects are quite good, although the pictures could do with being touched up. All pictures digitised with Rombo ST and Vidi Chrome. (C:DS)

SSC.79: Rob Williams SPC Slide Show 2: More digitised pictures of fantasy/RPG illustrations. (DS:C)

Utilities

UTI.175: Atari Interface Magazine Disk (June 1991): BUSYBUD - keeps BBS lines busy so that you won't be timed out; CAL51 - Calendar cum diary package. New features include: automatic HotWire alarms and DC-Squish compatibility. Attach events to days by date or position in month and CalShow now runs as AUTO program, GEM program or desk ACC; DC Boot It - lets you run boot disks from the desktop; DC Invert - flashes your screen whenever a BELL character is printed; DC Lefty Arrow - makes your normal arrow 'flip' around so you get a 'left-handed' mouse arrow; DC PopBar v1.0 - gives the GEM desktop a 'popup' menu of the menubar; DC Right Call v1.0 - gives you access to the file selector (including alternate ones like UIS III) with a press of the right mouse button; FNKALERT - lets you use the function keys F1, F2 and F3 to select the buttons in any GEM alert box; FormDoIt 1.2 - alters the way dialog boxes and alerts behave: Use the keyboard to select buttons in dialogs and alerts, Position the edit cursor anywhere in a field with the mouse, Enter any ASCII character, Re-define the icons used in alert boxes, and more!; HP2GDOS - Converts fonts in HP LaserJet format into GDOS format; LZH11316 - New LZH archiving program; NOVAGAME - great version of the arcade classic Galaxian (C); SERIAL - Fixes some problems with the serial port in TT/Mega STE TOS versions up to 3.05 and 2.05; SQUEEZIM - Squeeze IMG files by 2 to 70% - will do batch processing on folders of IMG files; TELEBASE Version 1.4 - Keep track of phone numbers; VCTRDEMO - The Vector Balls demo from Lost Boy's Red Sector Demo (C); VIDI2DLT - Converts a series of sequentially-numbered Degas .PI1 files to a delta (.DLT) file.

UTI.176: Sagrotan v4.14: English version of the 'standard' German virus protection package for the ST. (Sagrotan is a popular German disinfectant!) Gives comprehensive protection against infection from both boot-sector and link viruses, as well as options for keeping copies of bootsectors from auto-booting (games) disks so that they may be repaired should they become damaged or infected by a virus. (DS)

UTI.177: WORD SEARCH Puzzle Generator - excellent utility for generating Word Search puzzles of the type found in 'long train journey' puzzle magazines.

UTI.178: KAOS DESK - excellent, small, compact and efficient replacement desktop in the style of NeoDesk and Gemini. Part-translated into English by the South West Software Library.

UTI.179: Home Accounts 2 Demo - demonstration of the latest version of Digita's home accounting software. All features are enabled except save, includes comprehensive on-line help facilities. (DS)

Wordprocessing

WPR.89: MINITEXT - small compact text editor cum word processor with lots of facilities but some odd ideas about user-friendliness; Be Quick Text - for rapidly creating text files - few editing facilities; MY TYPE - Typewriter emulator - niceley done and handy for envelopes and filling in forms; TEXT FILT - crude conversion of text files with embedded control codes to something that your editor should be able to make sense of.

WPR.90: SPELL/ST - Very comprehensive spelling checker that comes with a dictionary of over 60,000 words. Very flexible and configurable, but lacks ability to make corrections directly into your texts. (DS)

WPR.91: TeX Utilities: PIC TEX: A set of TeX macros for the creation of figures and graphs within TeX documents; MUTEX - TeX macros for typesetting music scores; INPUT2 - Various style files for LaTeX; LOCAL.TEX and ADDENDUM.TEX - Guides for LaTeX; LATEX.BUG - Bug list for LaTeX; LATEX.INS - Instructions for using TeX and LaTeX. Files on this disk are archived using ZOO - a suitable extractor program is supplied. (DS)

WPR.92: TeX Utilities: INITEX - Program for building TeX macro files; BIBTEX - Bibliography database for use with LaTeX; SLITEX - Macro package for producing viewgraphs. (DS)

WPR.93: Timeworks DTP Support: BORDERS - collection of IMG and DTP files providing a variety of borders; CAL90 - Calendar templates; GENEAOLOGY templates; Hard Disk Backup template; CHRISTMAS - seasonal DTP pages. (DS)

Demo's

XXX.234 and XXX.235: SKID ROW DEMO - From the Alliance. 24 sub-demo's accessed through a Dungeon Master/Captive type "Play Area". A varied collection, containing colourful graphics, massive scrollers, Music (some of it Soundtracker), and hours of entertainment. Over 4MB of data compressed on to 2 D/S disks. (DS:C:1Meg)

Going On-Line

As the start of a new series to encourage readers to enjoy cheap electronic communications, Mark Baines explains why you should want to go on-line.

Günter Minnerup in issue 9 stated that your computer system is not complete without a modem and a CIX account. Whilst I wholeheartedly agree with Günter on the first item I beg to differ on the latter. It has often been said to me that the main reason why people don't get involved with comms is, of course, the expense. This comes in three parts - the hardware, BT phone charges and any extra service subscription charges. The latter is inevitable if you subscribe to CIX, Compuserve or Prestel but such payments are not compulsory to going on-line.

There are thousands of amateur services called Bulletin Boards Systems (BBS) throughout the world forming networks of computers and data, which provide free access to all with a modem. Don't get me wrong when I say 'amateur'. Most systems are run by dedicated enthusiasts, as professional and knowledgeable as any CIX or Compuserve sysop. Sysops? SYStems OPeratorS, a fancy term for the people who run the system.

Bulletin Board Systems

These networks of BBS span the world, the majority of which are in the U.S. and Europe where there is a strong ST BBS community. Owners of any computer are welcome as the software running on the BBS is computer independent. All BBS carry different conferences which are collections of recent messages concentrating on particular areas of interest. For instance, there is a popular European ST conference carried by 20 or so BBS across Europe where only messages pertaining to the ST are encouraged. There are MIDI conferences, wants and sales, graphics, science, UFOs or ordinary chat conferences where any subject is allowed. The list is endless and after logging on you will soon find the BBS that carries the conference you want. Depending on your tastes, I find that 2 or 3 BBS will satisfy most needs and regular logging on once or twice a week will keep you up-to-date.

So, conferences are where people can leave replies to others' messages or to everyone in general when you have a query about something. I have many times put up such a question and had worldwide helpful responses. I have made many friends through such a process, helping others in kind. I have taken part in discussions, promoted ideas and encouraged others and have being encouraged in return! I have made valuable contacts, sold old hardware, beta tested software and made bug reports and suggestions to software writers including HiSoft. It is this interactiveness that only comms can offer.

It is a sad aspect of comms activity that 90% of users don't send messages. At first it is daunting to reply to someone but this is helped with an off-line reader. The point is that without messages any conferencing system is dead and that everyone has something to offer. We all have unique experiences and knowledge. It is easy at first to think that someone else will answer a particular query, the answer seeming obvious. But don't forget that it isn't so to the query's originator and therefore may not be so to everyone else. However, the system is not this formal. Messages may just be quips at someone's comment, they may be an offer of support or just to say that he is talking rubbish! The banter is nearly always polite and helpful. Bad manners and language are rarely encountered and quickly discouraged by others. Users are often shy of what response their comments may bring. There is no need to be - unless you say something controversial, of course!

What else is there?

The BBS networks carry the most up-to-date PD and Shareware software available, some of which is unobtainable from any PD Software library. Some BBS specialize in the sort of software they carry. Starbase BBS in London is a world leading BBS in Space and Astronomy. Its expanding collection of specialist software and graphics is unsurpassed.

There are several networks of BBS, the two most popular being FidoNet, which is mostly PC-based, and FNet, which is totally ST-based. The differences between them are mostly to do with the type of BBS software they run. FidoNet has over 14,000 nodes throughout the world. A node is one BBS in the network and the traffic of messages carried from one BBS to the next may take several days to fully circulate. Any one BBS may link up to any other to exchange messages in one or more conferences so spreading those messages around the world.

Costs

So back to costs. Yes, you will need a modem and I will elaborate on these in the next article. Suffice it to say that you can get a decent one for around £50 second hand.

Next, the terminal software. As far as cost goes, some of the best ST terminal software available is PD and Shareware and available from the ST Club. I will be concentrating on Uniterm.

Lastly then, the dreaded BT phone charge. Most people live within local call distance of at least one BBS (I'm the exception in the wilds of the Highlands!) and if you live around London you're laughing. Log on at cheap rate time, after 6 pm and at weekends, and it will only cost about 5p for every unit of 4 minutes. Once you are familiar with a new BBS, have got your software sorted out and start using an off-line reader, you can quite adequately spend less than 30 minutes a week actually on-line depending on your enthusiasm and exuberance! This amount of time allows me to log on three times a week, collect over 600 messages to read, send over 40 messages and download the occasional program including ST Report magazine from the U.S. All for less than 40p at local call rate. Even at other rates it is the price of a pint of beer or two at the most and subscribing to Mercury will bring enormous savings in long distance calls. The amount of material to read can take hours and the pleasure of this, the interaction and the knowledge that you are a pioneer in a revolution in communications has to be worth that little cost. I have no regrets after 8 years, so why not give it a go?

Next month: setting up the hardware and software.

Proportional Print Under Control

Whatever your printer, if you want to control printer proportional fonts, Mike Kneen suggests Protext may be the answer to your problems.

'Piper' and Paul Rossiter gave us a good picture of Protext 5 in January's ST Applications. It really is a splendid programme, and can be bought for less that £100. My own concern with pieces of software is not so much whether 'this is the best thing since last month's rave review of a rival software package', but whether the product 'does something sufficiently useful to warrant a switch from what I'm using at the moment'. In my case, it was Protext's ability to control proportional printing that was the big draw. If you're not sure what proportionally spaced print is, see box A and fig 1.

I had had a Hewlett Packard DeskJet Plus for over a year, with the addition of a splendid Times Roman Proportional Font Cartridge. This provides Times normal, bold and (true) italic in 8 point sizes between 4 and 14 (72 'points' to the inch). Although a quick tinker (liar ... it took me hours...) with Wordplus's printer driver allowed me to call up some of the fonts, Wordplus simply could not control them to the extent of allowing justification or tabulation. Neither is it possible in Wordplus to mix fonts on one line. Excellent and simple though Wordplus is, I decided that Protext was probably the only way of allowing me to actually use my Font Cartridge to any useful extent.

Just at this stage, why should I be so interested in font control? And why, for that matter, should you? Most folk are content to use their printer's normal monospaced 'default' font for all their word processing output, perhaps using a DTP programme for any fancy output they require. However, there are many times when I want to print a report and would be glad to use a range of type sizes (for headings, subheadings and notes) without having to resort to a DTP programme. If you have access to such fonts for a high resolution printer such as a 24-pin, laser or an inkjet, you could use them to produce stylish documents with a variety of sizes of type and correctly laid out. The advantage would be in the speed of the production - both in processing and printing. The DeskJet can print an A4 page using a battery of printer typestyles in just over a minute. GDOS or Signum output from some sort of Graphics based word processor or DTP package would take at least four times as long. In this way I have been able to limit my DTP activities to those jobs that really do need DTP/Graphics output, and a great deal of time has been saved.

Arnor had an introductory offer, and I was tempted. Lo and behold, the Protext 5 arrived with a printer driver that only controlled the monospaced Courier typeface of my DeskJet Plus ... (The latest version of Protext 5 comes with a printer driver that makes use of all the typefaces available as standard on the latest DeskJet 500 including the proportional 'CG Times'.)

Although the package wouldn't control my proportional 'Times' straight from the box, all was not lost. First, the manual is well written - and how many programmes for the ST bother to have a non-intimidating 30 page introductory manual as well as the epic 380-page main manual? Second, a glance was enough to show that this really was a package that could be programmed to make tea (well almost). And thirdly, the manual had a detailed chapter setting out the method for producing a printer driver to control proportional fonts. At last I was on to something.

Controlling Proportional Print

The widths of the characters in a proportional font vary considerably. The classic ST 'posh output' programme Signum (and later programmes such as Word-Up) got round this problem by using their own fonts with graphics output to both screen and printer. A picture of the text is composed from bit mapped or outline fonts, and the resulting 'picture' is sent to the printer. These programmes lie somewhere between and ordinary word processing and desktop publishing, but with a heavier emphasis on 'text-crunching' functions and less on layout. Using a high resolution printer, the resulting type is of good quality, but the process is slow as the printer works in graphics mode. Screen re-draws can also be slower than when using a pure 'text cruncher', again because graphic output is being used. On the other hand, the screen display is 'WYSIWYG' and often provides a fair representation of the final output.

Protext takes a different approach. It has no fonts of its own, but controls whatever resident fonts the printer offers, as well as the humble ST resident font for the screen display. In the case of monospaced fonts (see Box A), no sophisticated control is required. Using 10 pitch Courier, for example, there are 80 evenly spaced characters in an 80 character line, and that's it. A tab' position 1 inch from the left will be at exactly 10 characters along the ruler line. In fully justified text, the word processing Programme has simply to calculate the width of a line and insert extra spaces to bring the right margin to the correct position.

In the case of Proportional type, the problem is much trickier. In order to make any calculations as to the line length, Protext needs to know the widths of the characters concerned, and can therefore determine accurately where the right margin should lie in fully justified text, or else where the tab positions should fall in tabulated text. This means that Protext is able to take sensible decisions about the use of the Printer's own characters and insert micro spaces as necessary to get everything to line up.

A further feature of this type of system is that it becomes possible to mix type sizes and styles in a line of text and still maintain correct positioning.

How does Protext do all this? There is no magical connection between the Printer and the Programme. The printer simply produces the characters and microspaces that are requested by the programme - whether they line up or not. Protext has to be taught everything it needs to know about the widths of the characters concerned. This is achieved by means of width tables.

A width table is exactly what the name suggests - a table of widths of the various characters in some sort of 'printer units' (Fig 2). How do you create a width table and where do you put it?

A simple way of measuring the width of a character accurately is to print say 60 of the same character on one line, and then measure the length of the line. Protext comes with a convenient file of lines of 60 of each character. Simply print this file using the required printer font, and there are lines to be measured for the font in question. A simple calculation converts the line length into character width in 'printer units'. The information can then be incorporated into a width table.

Of course, this is only one of the operations involved in setting up a customised printer driver. It is necessary to make sure that the correct control codes are sent to the printer to carry out your intentions, and that the Protext menus for typeface selection are suitably modified. In a forthcoming article, I will show how to edit a printer driver in detail. If you are keen to have a go right away, I found that by looking at some of the printer driver files as supplied, and working through the printer driver section of the manual (fairly clear) it was possible to work out what each bit of the printer driver did, and to insert my own modifications as required.

When all else fails, it is worth noting that Arnor are genuinely helpful on the telephone... The great advantage of the Protext printer driver system is that the driver file is a straightforward (!) text file. It can be edited in Protext, saved, be made the current driver and then tested all in one session. This is a far cry from editing First Word Plus printer drivers!

More about the ins and outs of controlling a particular printer with Protext another time. Just for now, was it worth the switch from First Word Plus?

First Word Plus is a useful programme. It is fairly easy to begin using, and is quite competent in what it sets out to do. Many folk use it for quite serious tasks and are frankly not bothered by its lack of speed or inability to control proportional printers (proportional spaced printing? see the note in box A). Fine - if you don't need a more expensive package, save your pennies for something more important.

Articles that have already appeared make it quite clear that the speed of Protext is something special. It not quite as fast as Tempus, but going that way. This really does make a difference when handling longer documents. The ability to control proportional print in a variety of type sizes, in multiple columns and so forth is very useful to me. If your printer can print sideways, Protext can support that too.

The key macros and customisation possible with this programme are also tremendous value. Since I still have quite a base of material written in First Word Plus, it is sometimes handy to access First Word Plus from within Protext. I press a macro key and - hey presto - Wordplus. Exit from Wordplus and I'm in Protext. Perhaps more usefully, I can also flit to and fro between Protext and a database program I use. The possibilities are endless.

Mail merging is simply and well executed in Protext. Again, the manual is clear and helpful. There seems almost nothing that can't be done. For example, inputting information to complete a series of standard letters directly from the keyboard as they are being printed, with Protext having been instructed to send some of the information to disk for future use. Protext has a series of commands that can be used within documents as a sort of programming language, with possibilities far beyond merging a simple letter with a simple address list.

So many of the quibbles I've noted in Forum seem unbelievably petty - mostly about the spell check facilities (excellent, and potentially very fast - depending on how you set up your system). I do get fed up with those arrogant folk who go on about how they learned to spell at school. Ti may not occur ot them thta some of us are not such hto typists, and that a spell check facility is jolly useful to sort out some of those mis-placed letters! But was it worth the change? Yes! Quite apart from the possibility of decent control of my printer, since I have been using Protext I have only used Wordplus when forced to do so. The proof of the pudding ...

EXAMPLES OF DIFFERENT TYPES

USED IN THE SAME DOCUMENT

IT is possible, *quite simply* to mix different type styles in the same line of print. You might also notice that in this case, using the HP Times font cartridge, that *The Italic is a genuine, cursive Italic*, and not simply a sloped version of the normal.

Fig 1: Example of mixed proportional print output using Protext and Hewlett Packard Deskjet plus with Times Roman Font Cartridge. Note (although one would never produce a text like this) the justification of the right margin despite the mix of type sizes and styles.

Box A

Monospaced versus Proportional

In Monospaced type, all the characters occupy the same width. This is the normal print on most typewriters and quite a few dot matrix printers. In proportional print, the character widths vary. This allows a more 'book-like' appearance, and incidentally a possible saving of space of some 25% over an equivalent size monospaced type. Examples of both types of output from the HP Deskjet are shown in figure 3.

Some computer printers produce a sort of 'compromise' proportional print. My old Amstrad PCW, for example, in conjunction with its resident printer, produced a narrow 'i' and wide m's and w's. This meant that, on average, a line of text in proportional type would occupy about the same length as a line of text in standard 12 pitch (12 characters per inch) monospaced type. When examining text produced by the Deskjet Times Roman Font cartridge, this simply is no longer true. The letters vary in size to a vast extent. A full stop takes up only a quarter the width of a capital W, and other letters take up a range of sizes between. A 'space' is also quite a narrow 'character'. The result of all this is that the length of a line of text becomes unpredictable, and tabulation and right justification a complete impossibility.

EXAMPLE OF MONOSPACED TYPE - Courier 10 characters per inch

The quick brown fox jumped over the lazy gate. 'Wow', he thought - 'that was quite a strain. I really must go easy on the poultry!'

EXAMPLE OF PROPORTIONAL TYPE - Times Roman 12 point

The quick brown fox jumped over the lazy gate. 'Wow', he thought - 'that was quite a strain. I really must go easy on the poultry!'

Fig 2: Monospaced and proportional fonts. Notice the same text takes up considerably less space in the proportional print.

```
PROTEXT  Prog 3    DESKJET.PPD   13K   ESC for Command mode   SCR  f3 for Menu
Ch 6745  Line 263  Col 1         Insert   No markers set                13:51:02

font 7 ; Tms Rmn, 14 pt
enter 27,"(s1p14v5T"
pw 26
widths
H29 §29 ◊48 ◊48 ◊48 ◊48
 16 !19 "19 #45 $29 %54 &48 '14 (22 )22 *29 +48 ,14 -19 .15 /29
029 129 229 329 429 529 629 729 829 929 :16 ;16 <48 =48 >48 ?29
@58 A47 B48 C41 D47 E48 F36 G47 H48 I21 J25 K43 L37 M55 N45 O47
P35 Q47 R45 S32 T37 U48 V44 W55 X45 Y39 Z41 [19 \29 ]19 ^29 _29
`14 a29 b31 c25 d32 e29 f28 g28 h32 i16 j17 k30 l16 m48 n32 o32
p32 q31 r22 s22 t19 u32 v29 w42 x28 y28 z25 {29 |29 }29 ~48
Ç41 ü32 é29 â29 ä29 à29 å29 ç25 ê29 ë29 è29 ï16 î16 ì16 Ä47 Å47
É40 æ45 Æ61 ô32 ö32 ò32 û32 ù32 ÿ28 Ö47 Ü48 ø32 £29 Ø47 ß32 ƒ56
á29 í16 ó32 ú32 ñ32 Ñ45 ª21 º21 ¿29 ⌐44 ¬44 ½19 ¼29 ¡29
«38 ß32 Γ37 π39 Σ43 σ38 µ36 τ28 Φ49 Θ53 Ω52 δ34 ∞48 φ41 ε29 ∩48
≡48 ±48 ≥48 ≤48 ⌠48 ⌡48 ÷48 ≈48 °27 ∙48 ·34 √33 ⁿ21 ²28 ■34

rem ∅ gives infinity - lazy 8, þ gives small box, ƒ = trefoil
```

Fig 3: Example of a width table from a Protext Printer Driver file. In this case, the widths listed are for the 14 point Times Roman font on my HP Cartridge.

Jeremiah's Journal

Splinterbone

Cinemaware may be gone but it's not forgotten. Jeremiah takes a look at three "golden oldie" titles which have recently been re-issued, and finds that they have lost little of their lustre!

Cinemaware Corporation were one of the very first software houses to seriously exploit the sonic and graphic capabilities of the sixteen-bit home computers. They were also one of the first companies to attempt to combine various types of game elements into one interrelated whole. You therefore find in each Cinemaware game a distinct blend of stategy, simulation, adventure and arcade sections designed to entertain through variety and to challenge the most jaded palate. This balance of styles, coupled with graphic screens which were beautifully drawn and coloured, and sound effects that were realistic and crystal clear, quickly brought the company acclaim from critics and players alike.

Unfortunately, financial problems recently led to the closure of Cinemaware and their unique style of game has gone into limbo, at least temporarily. However, Mirrorsoft are in the process of re-releasing the entire Cinemaware back catalogue on their budget Mirror Image label, so for those who have yet to sample these milestones in Atari games development, the opportunity to do so is now available at a very reasonable price.

Defender Of The Crown

This was the very first Cinemaware title to arrive on these shores, and many gamers well remember the impact it made upon both them and the market in general.

It is the Middle Ages and the King of England lies dead. The land is torn asunder with bitterness and strife. To the north, three Saxon nobles dominate the countryside, whilst to the south, three Norman lords hold sway over life and death. The kingdom waits for a hero - a champion - to reunite its warring factions and restore peace and tranquility to its green and pleasant valleys.

You play the part of one of the Saxons and your mission is to win the throne by capturing each of the Norman fortresses which oppose you. In order to do so you will need to build up your forces and fortifications by investing the income from your lands into strengthening your armies and constructing new castles. Once you are sufficiently sure of your strength, you can venture out onto the campaign trail and attempt to add new conquests to your existing holdings. If you are successful, you will have acquired a source of extra income with which to further develop your assets in preparation for the more extensive battles ahead.

Whilst you patiently build up your resources, you may be offered the opportunity to provide a welcome boost to your income by partaking in other activities. A trip to the joust may bring both fame and fortune, or a stealthy raid on a richer neighbour may bring his treasury into your grasp, or a bold mission to rescue a kidnapped princess may result in a powerful military alliance. The opportunities are there to be grasped - and if you find yourself in need of a little more help than you have presently available, then Robin of Locksley and his Men of Sherwood will willingly come to your aid on up to three occasions.

Sinbad

Sinbad and the Throne of the Falcon (to give the game its full title) quickly followed Defender of the Crown into the eager hands of enthusiasts everywhere. Initial impressions praised the product for building and improving on the style laid down in Cinemaware's previous release. However, later on, more considered judgements proved to be a little slower when it came to issuing plaudits.

The Caliph of Damaron has been bewitched! His daughter, the Princess Sylphani, discovered him this very morning - transformed into a falcon! The physicians shake their heads in bafflement. They are unable to break the spell that binds their ruler. But they are all agreed on one thing - if the spell is not broken soon, the Caliph may be trapped within the form of a falcon forever!

The Princess bravely lifted her noble chin and fought to hold back the tears which clouded her eyes. She immediately summoned her childhood friend - the mighty hero Sinbad - to come to Damaron and aid her in this hour of desperate need.

You take the part of Sinbad and the task you face is formidable. You must marshal the Caliph's forces in defence of his realm, you must undertake a far-ranging voyage in search of a remedy to remove the falcon bewitchment, and you must keep the Caliph's children - the Princess Sylphani and the Prince Harun - under your close personal protection.

In order to solve the mystery, you will need to locate four disparate characters - a seductress, a shaman, a genie and a gypsy - and extract from them information which will prove vital to your quest. This will not be easy. Each character requires a different approach to be adopted in order to loosen their tongues sufficiently for them to tell you what you need to know. You'll need to bully, flatter, persuade and demand your way to ultimate success.

At the same time, you'll need to avoid the attentions of the villainous Black Prince Camaral and his despicable flying spies - the Pteranoxos. You'll have to solve the ancient mystery of the Three Idols, battle with an enraged cyclops, and steer your ship safely through treacherous reefs. Whilst, inexorably, the enemy forces tighten their grip around the Caliph's capital city.

Whilst on your journey, you will be able to communicate with your army commanders in the field by means of an enchanted stone, and you'll be able to observe their movements and those of the enemy on a magical hexagonal map. You must use these objects to organise your defence of the city of Damaron. You must place your forces in positions where they can hold strategic supply points, and also fend off the advances of any of Prince Camaral's raiders which venture too close to the borders of the city. The successful defence of the supply points is the real key to military success. As long as an army holds a supply point, it will be continually reinforced up to its maximum strength. It therefore stands to reason that the loss of a supply point to the enemy will have a vital effect on your ability to offer continued resistance. The route to ultimate victory lies in the successful manipulation of your armies so that weak units are moved to supply points for reinforcement, and strong armies are positioned to attack and destroy encroaching enemy troops.

Rocket Ranger

Rocket Ranger came chronologically third of the three games considered here. Like the others, it remained faithful to the spirit of the old Hollywood silver screen. In this case, the Saturday morning serials of my youth, which featured the Rocketmen, were the chosen source material (recently revived yet again in the new Disney movie "The Rocketeer").

The year is 1940 and a lone scientific genius receives a message from the future. An underground group of freedom fighters sends a desperate plea for salvation into the past to arrive at a crucial point in the history of mankind.

The news is not good. In this possible future existence, the Nazis won the Second World War and so began the reign of terror known as The Thousand Year Reich. Our descendants live in miserable slavery - kept alive only as long as they continue to be useful to their conquerors. Dawn to dusk they labour ceaselessly, their efforts directed towards realising the ultimate Nazi dream - the conquest of space!

In one final outlandish attempt to thwart these ambitions and change the tide of history, a small resistance cell constructs an experimental time machine and sends information and equipment into the past - to you - so that the world may have a chance of future peace and freedom.

The equipment you are given consists of a rocket pack, a decoder, a radium pistol and a wrist monitor. The information concerns a sudden leap in Nazi technological knowhow which will, if unchecked, lead to their eventual triumph. You have the power to stop the blitzkreig - its up to you to use it effectively and wisely!

You take the part of the world's newest hero - Rocket Ranger - and your task is to stop the Nazi war machine spreading over the entire planet. In order to do this, you must locate and steal five randomly placed parts in order to build a space ship. You must then acquire enough lunarium fuel to fly the craft to the moon, where you will discover and destroy the source of the Germans' newfound power! While you are setting about this, the relentless Aryan onslaught will continue. You must succeed before all the countries in the world are overcome or the game will be over.

In order to locate the five parts of the space ship, and also extra supplies of lunarium to keep your rocket pack functioning, you are given control of five espionage agents. It is up to you to deploy these agents in various countries throughout the world, infiltrating their defences, discovering their secrets, and organising resistance groups to battle the oppressors. Once you locate a piece of the space ship, you must fly to its location yourself, overcome the guard protecting it, and return the machine to your base at Fort Dix in the United States. When all five parts are present in Fort Dix and loaded with 500 units of fuel, you will automatically launch for the moon and the final showdown.

At the same time as you attempt to track down the parts of the space ship, you also have to try and stop the brilliant scientist Professor Otto Barnstorff, and his beautiful daughter Jane, from falling into the hands of the Nazis. You are given three opportunities to effect a successful rescue before the Barnstorffs are taken to the German lunar base. If you fail, the Professor will be put to work increasing the efficiency of the lunarium refining operation which oils the wheels of the Nazi war machine. If that is allowed to happen, the rate and scale of enemy conquests will dramatically increase and the birth of The Thousand Year Reich will loom ever closer.

You will also be given opportunities, from time to time, to hinder the German war effort by attacking strategic installations and supply routes. Your agents will supply you with the necessary information as to where these features are located. It is then up to you to fly to the country concerned and overcome the forces arrayed against you in order to destroy your objective and lower Nazi efficiency. The lower the efficiency of the enemy forces, the longer it takes for them to conquer countries, thus allowing you more time with which to finally stop them.

Reruns and Main Features

The Cinemaware "style" doesn't appeal to everybody. There are those who find the strategy elements too weak and incomplete. There are those also who find the arcade elements too difficult and/or repetitive. Both criticisms are, to a certain extent, justified. By concentrating so heavily on the graphic and sonic features of the games, Cinemaware have skimped a little on the depth of gameplay. However, considering that the company was attempting to produce games which would appeal to a large cross-section of gamesplayers by featuring a number of differing games elements, it is unsuprising that no one style would take dominance over any other. It is therefore unlikely that anyone seeking a long term strategic or role playing challenge will be overly attracted to Cinemaware products. Similarly, there is insufficient frantic action to attract the dedicated "joystick waggler".

In effect, the Cinemaware game design process was to construct a series of different subgames which linked, by means of a common theme and a series of graphic screens, to an overall game concept and purpose. Therefore, in Defender of the Crown, you have a stategic game of conquest, coupled with swordfighting and jousting arcade sequences. Similarly, in Rocket Ranger, you have a strategy game where you have to deploy agents and uncover information, coupled with sections where you destroy squadrons of the Luftwaffe, or take out fortified machine gun nests using your trusty radium pistol.

The real beauty of the Cinemaware games, however, is that there is sufficient of each style to produce an absorbing and addictive mixture which always kept you coming back for just one more crack at defeating the Normans, or overcoming the Black Prince, or thwarting the Nazis.

Extra spice is added to the challenge by the fact that the games are played in "real time", and you only have a limited number of moves before your opponents complete their tasks and you, by default, are defeated. Similarly, the absence of a "save game" feature means that the games were designed to be completed in just one sitting and therefore are ideal to sit down with for no more than a few hours in order to see if, this time, you might hit upon that winning strategy at last.

I've very much enjoyed playing the Cinemaware products. Of the three titles considered here, I was a little less enthusiastic about Sinbad, but would recommend Defender of the Crown and Rocket Ranger to anyone.

Product:	Defender Of The Crown; Sinbad and the Throne of the Falcon; Rocket Ranger.
Authors:	Various
Publisher:	Cinemaware Corporation
Marketed By	Mirrorsoft (Mirror Image)
Price	£9.99 each

From the Hotline

Hints, tips and news from the COMPO Hotline

Missing Mice

Some people report problems getting the mouse to work under *PC-Speed*. As with any PC compatible, this is normally a two-stage process. First, a mouse driver has to be installed. The Atari mouse under *PC-Speed* emulates a Microsoft mouse, so any Microsoft-compatible mouse driver will do (for example, the one given away with the demo version of Microsoft Word!). Instructions on installing the mouse driver are given in the *Speed* manual. But there is a second stage as well, and that is to configure your application software to use the mouse. Because the original PC standard did not include a mouse, a lot of software does not automatically support its use. Most programs can be configured to do so, and it is a matter of studying the installation instructions for each application.

Fonts in That's Write

One of the strengths of *That's Write* (and *Write ON*, which handles fonts identically) is its ability to handle multiple fonts. You may well want to add new fonts to your system - for example, the fonts supplied do not include a true italic typeface. And your printer may have built-in fonts which you want to use. The easy way to do this is to purchase font disks from the COMPO hotline - there are good sets of Times (£14.99 - 300dpi only) and Avant Garde (£12.99 - 9-pin, 24-pin or laser/deskjet), for example, along with printer support disks which will access all the built-in ROM fonts in various printers (details from the hotline). But if your requirements go beyond that, you will need to know more about *That's Write* fonts. Do also get hold of Jeremy Hughes' *Fontkit Plus* program from the ST Club, which is a lot more flexible than the *That's Font* utility supplied with *That's Write*.

That's Write supports one kind of screen font, and three kinds of printer fonts. The screen fonts are standard GEM fonts, with one or two special characters like the footnote numbers, endnote numbers, and hyphenation symbols. The printer fonts are either resident printer ROM fonts, downloaded printer RAM fonts, or bitmapped GEM fonts. This month, we will concentrate on printer ROM fonts - a future article will cover GEM fonts.

Pseudo-Fonts

Resident printer ROM fonts (including printer cartridge fonts if present) are controlled by a printer-driver (called *.TWP or *.WOP) along with pseudo-font files called X***.FNT/IT/SML/SIT. These are called pseudo-fonts because they do not contain information about the font itself, but only instructions to the printer to turn the font on and off. Most WPs hold all this information in one printer driver file - but then, most WPs do not have *That's Write*'s flexibility! To construct a pseudo-font you need:

a) A screen font of correct height and widths.

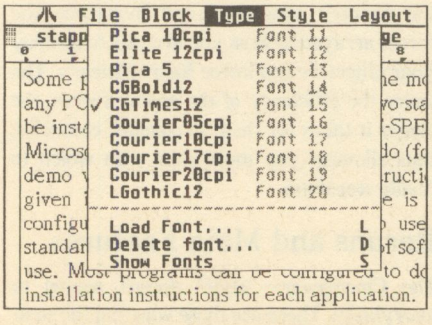
b) A .TRS file - this is an ASCII file which maps the screen font to the printer font.

c) A .WTS file - this is another ASCII file which contains the escape codes which switch the font on and off, and (for proportional fonts) a width table.

d) The program THELP.PRG or WO_HELP.PRG, to compile the .TRS and .WTS into one X***.FNT/IT/SML/SIT file.

Why are there four kinds - FNT/IT/SML/SIT? If all four are defined, *That's Write* will use different fonts according to the style selected from the **Style** menu - normal, italic, super- or subscript, and italic super or sub-script. If all four are not defined, the standard FNT font will be used and the styles will not be seen in the printout.

To be successful in making new pseudo-fonts, you need to pay close attention to the printer driver as well as the pseudo-fonts themselves. For example, the easiest way to switch between a printer's draft and letter-quality mode is to have a separate printer driver called DRAFT.TWP, which includes a code to switch the printer to draft mode. Then you would have to ensure that the pseudo-fonts did not override that by sending a "letter-quality" instruction. If you wanted draft and letter-quality fonts in the same document, you could define appropriate pseudo-fonts to achieve it.



Above: HP DeskJet 500 internal fonts may be used in That's Write.

Right: Compiling a pseudo-font in THELP.PRG.

Justification and word spacing

That's Write determines line spacing and the position of line breaks according to the dimensions of the screen font. However, when it comes to print, the program calculates the width of each line using the printer font widths, and adjusts the space between words to keep precise justification. This means there are three important rules to bear in mind:

1) A close correspondence between the screen font widths and the printer font widths is essential for good results.

2) Fine control over line spacing is achieved by adjusting the screen font height in a font editor.

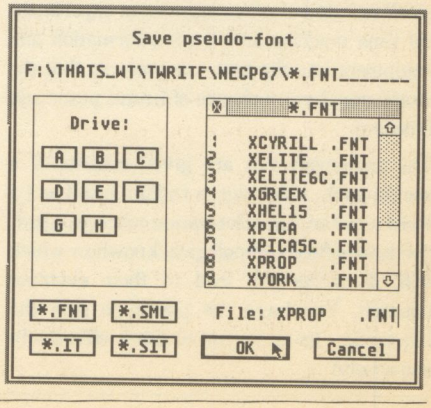
3) If justification is not working correctly, the reason is probably an incorrect width table (for pseudo-fonts); or possibly a large discrepancy between the screen font and the printer font.

The next step

So do you need to install new pseudo-fonts? If so, you will need to get a disk from the COMPO Hotline (£2.99) containing commented examples which show the format of TRS, WTS and PCS source files. If you succeed in creating full support for the Obscurotronic Multi-font printer - why not send in the results to the ST Club for inclusion on a *That's Write* help disk?

The COMPO Hotline is on 0480 891271 3pm to 8pm Monday to Friday; or send a fax on 0480 890787. Finally, if you have tips for other COMPO users, send them to me c/o ST Applications.

Richard Lane



The A to Z of the ST

Part Three: F - G

Compiled by Mark Baines

False: One of two logic conditions represented by a 0 and opposite to true.

FAT: *File Allocation Table.* A data structure on a disk representing a map of all the disk's clusters (2 sectors) so that GEMDOS knows where to look for a certain file. Each entry is a 12 bit number giving the next cluster of the file, whether it is the last, or whether the cluster is unusable.

Fast RAM: RAM having an access speed of 80ns or less, or the 32 bit RAM in the TT (TT RAM).

Field: In databases and in GEM dialogue boxes, that part of the record or form that consists of a single piece of information used for processing, i.e. the 'name' field in an address database file.

FIFO: First In First Out. Algorithm used in determining the order of access of data elements, the basis of a queue.

File: In databases, a collection of individual related records such as an address file. Now synonymous with any individually accessible unit of related disk storage such as a program or data file.

File access: Making transfers between RAM and disk storage.

File attribute: See Attributes.

File conversion: The process of converting the format of a file to suit another computer or program, e.g. Degas to .IMG.

File description: Directory entry identifying a particular file, consisting of name, size, date and time.

File directory: A list of files on a disk as maintained by the operating system.

File menu: Usually the second menu in a GEM program where access to disk operations on the program's data is provided.

Filename: A character string that identifies uniquely within a directory a file. On the ST, consists of up to 8 alphanumeric characters separated by a full stop from the extender.

File protect: Preventing writing to a file by opening the disk write protect hole or setting the file attributes to read only.

File selector: GEM routine or third party programs that enables access to files.

Filespec: *File specifier.* The search criterion used in a file selector, e.g. *.DOC only shows files with the DOC extender.

Fill: Writing a pattern of bits to a memory location or in a graphics program to an area of screen display.

Find: Program routine to search for a particular data item.

Firmware: Term used for programs stored on ROMs.

Flag: An indicator showing the existence of a certain condition when set.

Flash: To blink, a state of cursors.

Flat file: A non-relational database file representation of a manual card index file.

Flatbed Plotter: A plotter in which the pen moves in 2 dimensions over the paper.

Floppy: Refers to the flexible magnetic disk rather than the case that protects it. See Disk.

Floppy Disk Controller - FDC: The WD 1772 chip controlling the floppy disk drive on the ST.

Floating point: Representation of numbers that consists of the fractional part (the digits) and the exponent (the position of the radix point) e.g. 123.4 = 1.234 E2

Flowchart: A diagram showing the movement of control through an algorithm.

Folder: A subdirectory within a file directory on a ST/TT disk with its own icon in listings.

Font (Fount): A character set of the same design for display on screen or printer. Typically has various styles such as italic, bold, etc.

Form: To a programmer, a GEM dialogue box.

Format: The initialization of a disk ready for use, physically removing all previous data. Also, the physical organization of data within a file.

Form Feed - FF: ASCII character 12 normally causing a printer to move to the start of another sheet of paper.

FORTH: High level language designed for real time control applications.

FORTRAN: *FORmula TRANslation.* One of the first high level languages designed for mathematical and scientific applications.

Fragmentation: The state of a disk when files do not occupy contiguous sectors thus slowing down its reading.

Free space: Available memory on disk or RAM.

Friction feed: Printer that does not use sprockets to move the paper.

Front end: The interface program between the user and the operating system, such as the GEM Desktop.

FSMGDOS: *Font Scaling Module Graphic Device Operating System.* Replacement for GDOS allowing use of outline fonts instead of bit-mapped ones.

Full box: Top right window icon that resizes window to full screen size and back again.

Function: A sequence of instructions in a program to accomplish a particular operation, also called a routine.

Function key: A key (F1 - F10) assigned a program-independent operation.

Gate: A control junction of a transistor or a basic logic circuit.

Gateway: A computer in a communications network that is part of two different systems and thus a convenient route from one to the other.

GDOS: *Graphic Device Operating System.* Part of GEM contained as a separate executable file (GDOS.PRG). It contains device-independent functions for font and graphics for screen display and printing, allows the creation of metafiles and provides support for various output devices up to a resolution of 32,767 x 32,767. It allows graphics to be printed at the highest resolution of the output device. Must be in AUTO folder and needs ASSIGN.SYS file. Latest version is GDOS Release 1.1.

GDP: *Generalized Drawing Primitive.* Ten basic drawing functions of the VDI such as circle, rectangle etc.

GEM: *Graphics Environment Manager.* A graphics oriented operating system front-end developed by Digital Research. It is a true WIMP environment consisting of 2 major subsystems, the VDI and the AES.

GEM metafile: File with .GEM extender containing vector graphics data produced by an object-oriented drawing program.

GEMSYS: Traditionally the folder where GEM fonts are stored.

Generation: Term used to indicate the technological state of development of computers. The current computers are of the "third generation".

Giga - G: A (U.S.) billion or 10^9.

GIGO: *Garbage In Garbage Out.* Term used to emphasize the fact that a computer can only produce good results from good (accurate) inputs.

GIOS: *Graphic Input/Output System.* GEM's input/output system containing all the device-specific I/O functions for devices connected to the ST. It is the interface between GDOS and the I/O devices.

Global: In programming, a variable available to any function and holding its value during execution.

GLUE: Atari custom chip that 'glues' all the others together. Generates the timing frequencies for other chips including the 68000's 8MHz, interrupt and various video signals and handles all requests for memory access and I/O.

Glytch: On disks and tape, where the magnetization pattern of one track crosses over onto another making the reading of the data difficult. Sometimes wrongly used to describe an error or bug.

Golfball printer: Printer using a small sphere with characters embossed on it which when pressed against a ribbon prints the character onto paper. Effectively replaced by the daisywheel.

Graph: Two-dimensional representation of numeric values consisting of lines or curves superimposed on a grid.

Graphic: Meaningful two-dimensional representation of elements such as lines and dots as printed on a display device, e.g. a character, picture, icon.

Graunch: Term applied to a hardware failure (originally a disk head crash).

Greeking: Method of representing text on screen by a series of horizontal lines when that font is too small to fully display properly.

Grid: Series of parallel perpendicular intersecting lines to which screen objects can be snapped into place for accurate alignment, such as in a DTP frame.

GUI: *Graphic User Interface.* An operating system front-end that is graphics based, i.e. icons and mouse controlled. GUIs are not necessarily full WIMP environments like GEM and the Mac, e.g. Windows3 on the PC.

Gulp: A group of several bytes.

STICKS AND STONES

Back to his roots for Günter Minnerup this month as he puts right some exaggerated tales of a land where the grey plastic boxes with the Fuji are supposed to hold their own against Big Blue and the Big Apple. Not quite, he says, and certainly not forever.

Düsseldorf. Not a name to set the average pulse racing in quite the same way as other continental cities, but for serious ST users Düsseldorf has acquired a status similar to that of Paris for lovers of fashion or sin. The Düsseldorf Atari Show every August is the undisputed highlight of the Atari calendar and the prime showcase for hardware manufacturers and software houses - so important to Atari Corporation themselves, a cynic might add, that they used it to formally launch the TT not merely once, but for two years in succession!

The pre-eminence of the Düsseldorf show reflects the astonishing success of the ST in Germany. Quite simply, without the German market, which accounts for roughly a quarter of the company's global turnover, Atari would probably not have survived as a manufacturer of computers as distinct from games consoles. This is quite a unique situation: like most other major computer manufacturers, Atari are an American company, but unlike the others, they have been largely unsuccessful in what is still the make-or-break market for personal computers. Not to put too fine a point on it, the ST has been a bit of a damp squib in the States. In the rest of the English-speaking world, in countries like the UK, Canada, and Australia, the ST is mainly known as a games machine and in that role increasingly being eclipsed now by the Commodore Amiga and the Japanese consoles. Yet in Germany, most of the half-a-million plus STs sold are 1 megabyte machines or larger, with monochrome rather than colour monitors, running serious applications rather than games software. On my frequent visits to Germany, I have seen Atari dealers where a small selection of games are kept in under-the-counter drawers like British newsagents might keep the sort of magazine that would attract the vice squad if displayed on open shelves.

The minority of serious ST users in Britain know all about the German ST market. After all, much of their software hails from the land of the umlaut: Calamus, Signum, Script, Didot, Retouche, AvantVektor, Adimens, MegaPaint, GFA Basic, Cubase, Notator. Where would the Public Domain libraries be if it was not for the endless supply of new utilities from Germany, often supplied with endearingly dodgy English documentation? Then there are the hard disks, scanners, memory expansions, graphics cards, monitors and PC emulators from names like Vortex, Protar, Maxon, Sack, Eickmann and Print-Technik. Some major British players in the ST market - Signa Publishing spring to mind - have specialised exclusively in the import of German products.

All this gives rise to some exaggerated notions among British and American ST owners of a promised land right in the heart of Europa where the Fuji logo reigns supreme. Let me assure you that this is not the case: even in Germany, Atari are well behind IBM-compatibles and Apple in the business sector. Atari Deutschland may have established impressive DTP Centres in most major cities, complete with wall-to-wall carpet and potted plants, and DMC may make all sorts of claims about Calamus, but the fact is that only around five percent of all commercial DTP bureaus support the Atari platform. Lotus 1-2-3 rules the spreadsheet sector as much as it does in Britain and America, and few businesses entrust their correspondence to anything other than WordStar, WordPerfect and Microsoft Word. Even in Germany, the ST is very much a minority, even a fringe, machine.

The difference, however, is in the profile of that minority: students, professionals, small businesses, educational institutions. Very similar, in fact, to the Apple Macintosh users in the US and the Amstrad PC/PCW owners in the UK. By sheer luck rather than design, Atari Deutschland found themselves in the right place at the right time when the personal computer boom took off in Germany. There was no BBC television series to divert the initial demand towards a German equivalent of the ludricous Acorn boxes, nor a German entrepreneur of the marketing genius of Alan Sugar to spot and meet the latent demand for cheap wordprocessors. The ST could be judged on its "power without the price" merits, not having to live down Atari's Anglo-American games consoles reputation.

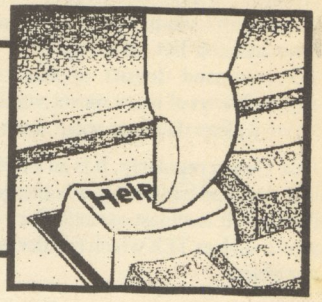
These favourable conditions could not and did not last forever. Any close observer of the German scene will have noticed that Atari are under pressure - from the IBM clones percolating through the market in a downward direction, from the Apple Macintosh, even from the Amiga, with Commodore's traditionally strong presence in Germany. Established ST software houses like GFA and Tommy are increasingly turning their attentions to other platforms, attendances at Düsseldorf were down this year, and Atari's corporate performance is increasingly criticised in terms not dissimilar to what can be heard on this side of the Channel.

Far from being the promised land, therefore, Atari's ability to defend its German position of relative strength, and build on it, will be the real test of its long-term survival in an increasingly competitive market. However important and sizeable the German market, especially after unification with the East, Germany is not quite large enough to ensure the survival of the ST range by itself. Unless European and American successes follow, the share of the German market will fall under the pressure of machines with a truly world-wide user and developer base. From that point of view, I wish that German software houses and hardware manufacturers were less dominant than they are now, and that my hard disk held more Anglo-American applications than translations from the German.

What it all comes down to in the end is that the ST range, based on the Motorola 68000 chip, is beginning to look rather tired. There will be new software written for it, of course, as long as there is an existing user base of hundreds of thousands, but it will not attract any bold new projects. When first launched, the ST created genuine excitement because of its powerful hardware - if all those who then showed a genuine interest in the "Jackintosh" had stayed with Atari, the company would now be in an entirely different position. This is why it is so desperately important that the TT is marketed aggressively and imaginatively, which above all means a cut in price and an increase in publicity and availability. In a year or two, the 68030 processor will have been left too far behind to really compete in the "Power without the price" stakes, and it will all be too late. And that could well mean curtains for Atari not only here and in the US, but in Germany too.

Now excuse me while I answer the door. There is a van parked outside, and I think it must be the long-awaited delivery of my TT.

FORUM



The Forum pages are a regular feature of ST Applications, enabling readers to exchange ideas and help each other out with problems. Whilst we attempt to briefly answer questions here, if you have additional information or ideas please do submit them for publication. What you consider to be trivial information can often be of condiderable use to other readers!

Please send your letters on disk if possible. Disks will be returned with a PD of the writer's choice. Longer submissions may appear as articles, in which case you will receive payment at our standard page-rate.

You can now post messages for inclusion in the Forum via the CIX bulletin board on 081-390-1244. All messages posted onto our stapplications conference on CIX are considered to be for publication. Private mail can be sent to us with mail to paglo, but do not expect an instant reply! Messages reprinted in the magazine Forum pages are identified by the CIX stapplications conference message number after the author's name.

CIX is a commercial system with a £15 joining fee and on-line charges of between £2 and £3.10 per hour. For more details see the introduction to CIX in issue 3 of ST Applications.

Key:

The following codes are used for each Forum entry:

J Pringle - Forum 29: Author who first raised the subject, and in which issue. In this case 29 refers to the Forum pages in Issue 29 of The ST Club Newsletter.

Q Question

A Answer

I General information or 'Input', advice, discussion, hints and tips, etc., with or without reference to previous Forum pieces.

● Editorial reply

First Glasgow Computer Fair

I Visitors to Glasgow will know of "Ra Barras" (The Barrows) weekend market, where the canny can unearth the bargain of a lifetime and the unwary can be fleeced. The 1st Glasgow Computer Fair held at the Glasgow City Halls on Saturday 7th September 1991 was unlike Ra Barras - you don't have to pay to get into the latter!

The event was not particularly well advertised to the general public. This was, with the benefit of hindsight, a blessing because it had obviously not been well advertised to potential exhibitors.

The "venue" was the main concert hall of the City Halls. There were no stalls or exhibition stands. Instead, there were trestle tables along two walls and a couple of trestle table corrals (if that expression brings the term "cowboys" to mind, then you are beginning to get the picture).

There were a few "box-shifters" (I hesitate to use the term - "plastic bag shifters" would be more accurate), a few tatty games in tatty boxes, bits and pieces of old computers, keyboards minus the keys, old disk drives, dubious looking fax/modems, printers. It was simply dire.

There were one or two rather ashamed-looking people making a serious effort, notably a young local Atari software PD supplier from whom I purchased a couple of pretty nifty disks (spreadsheet and database) for £1 each, and a trader selling mouse mats, head-cleaners and other bits'n'bobs.

Other than that, the whole thing was a disaster. Punters were milling around with disbelieving looks on their faces, hoping that some more interesting and worthwhile traders would appear late on the scene. I held no such optimism and left after half an hour. The PD bloke told me that the whole thing was a last-minute affair and that there was an all-format exhibition due in a couple of weeks which "should be better". I will watch the press for details.

The galling thing was that most of the items for sale on the dozen or so tables could have been bought at Ra Barras. It was not a computer fair at all. It was a Paddy's Market, a rummage sale, the seediest type of fringe with the main event missing. It must have spread disillusionment to those who had come along full of expectation.

H J Lee

Gulam

Les Bessant - Forum STA5
Tony Williams - Forum STA8
Les Bessant - Forum STA10

I In Issue 10, Les Bessant referred to changing the keyboard definitions for the delete key in Gulam by using the 'kb' command. Unfortunately, there are several different versions of Gulam around. They all seem to be labelled as Beta versions and it is not very easy to know which is the most recent. However, in my version, which seems to be called 1.03.04.05 121887, the 'kb' command doesn't work. (At least I have never succeeded with it.)

I, too, felt that the delete key should delete the current character, and so I decided to modify the binary program file, a process that is in fact quite easy for anyone who has an editor that works with binary files and shows hex values. Near the end of the program, among the error messages, are 3 tables - one for each of the 3 types of buffer in Gulam. These contain the keycode in hex (4 digits) followed by the corresponding Gulam function code (also 4 hex digits). The standard entries are:

```
00 7f 00 1c
```

(07f being the delete key and 1c being backward-delete-character in Gulam).

If this is changed to:

```
00 7f 00 1d
```

in each of the 3 buffers then the delete key works correctly. (1d is the Gulam delete-character as used with CONTROL D.) Try the alterations on a copy of the program, not the original, in case of mistakes.

I have in fact come across at least 3 different versions of Gulam. The earliest had an American keyboard configuration built-in and there

were difficulties with several keys. However the main bug was that re-direction wouldn't work with the 'cat' command. Someone did produce a stand-alone program called Cat.Prg to use with Gulam. In a later version 'cat' has been mended but, as I explained above, the 'kb' command doesn't appear to work. If anyone knows of more recent versions I would be very pleased to hear about them.

I use Gulam regularly. It is an excellent UNIX-like shell and has the big advantage of a built-in editor. It is almost essential for running programs such as TEX which require environment variables.

Henry Moring

DeskJet Matters

Keith Baines - Forum STA1
Andrew Barclay - Forum STA3
David Alwyn Jones - Forum STA5
H H Paterson - Forum STA5
Will Mowatt - Forum STA6
John G Frazier - Forum STA6
David J Lindsay - Forum STA7
Paul Bates - Forum STA11
John Wilkinson - Forum STA11
N Linett - Forum STA11
J I Logan - Forum STA11
Jeremy Hughes - Forum STA11

With reference to N. Linott's letter here is the answer to his problem with Calamus printing pages offset top and left on the HP DeskJet.

At offset location 0x02C0 in the DeskJet .CPD file you will find the sequence of bytes shown as the "Before" listing in the box below.

If you change it to the "After" sequence using a program such as DLII.PRG all your problems will be solved.

Alternatively, you could use the program that I enclose with this letter to do it automatically (included on Disk Mag DMG.26). I echo N. Linett's sentiments with regard to Signa.

Matthew Carey

I feel that there has been some false (or out of date) information given under this topic. The Calligrapher demo disk from Working Title has no GDOS printer drivers at all. The ASSIGN.SYS file is merely a list of screen fonts, as far as I can see. The First Word Plus printer driver I received recently from the ST Club is OK for text, but when I printed out the TEST.DOC supplied with FWP no tiger image appeared, only a blank space. Inspection of the hex file revealed that the graphics driver is missing.

I telephoned GST, and it seems that their own driver will not support graphics. I would have thought that GST would have been able to provide a fully functioning printer driver for their own product? The confusion is compounded by GST's Tony Brown in issue 10's Forum, who makes no mention of IMG graphics in his text.

The only way I can print graphics at the moment is with Deluxe Paint's print program. It is necessary to tweak the colour values before printing, otherwise all light tones print the same. If the palette were all grey this would be done automatically, but on an ST you can't get 16 shades of grey, only eight including black and white.

Finally let me praise Mediaware of Crewe (0270-666616) for their prompt delivery of the HP DeskJet 500. This cost £361.90 including VAT and a cable.

Dave Henniker

● A DeskJet GDOS driver is available from Working Title - but you must specifically ask for it. As you have discovered, the drivers are not included on the standard Calligrapher demo disk. As for First Word Plus: it seems that, as a result of the different ways that each handles graphics data, there is very little hope of there ever being a DeskJet driver that will support graphics.

Mouse Button Repair

Derryck Croker - Forum STA7
Keith Hellawell - Forum STA11
Adam Boocock - Forum STA11

I hope that I have not put Keith or any one else to needless expense in purchasing the microswitches to replace faulty mouse buttons. The mouse on which I performed the mod has the IC that Keith mentions on the *underside* of the board as an SMD chip and does not have the vertical row of resistors that he describes. That leaves plenty of room for mounting the switches, taking care not to cause shorts as I outlined. This mouse is made in Taiwan, whereas the second mouse that I now have as a spare is marked as made in Hong Kong and is as Keith describes. Sadly, I cannot see any way of modifying it. Replacement button switches are therefore the only available option at about 30p each, look in the monthly glossies for adverts. My modified mouse, together with an accelerator, is by far the best mouse that I have tried so far, including those new-fangled optical thingies. This is another example of the problems that arise for the hardware hacker owing to the wide sourcing of STs.

Derryck Croker

FSP3 and PageStream

First impressions indicate that PageStream 2 is extraordinarily powerful in some respects - particularly the CYMK colour separations, a (so far) bug-free PostScript driver, plus the ability to download additional PostScript fonts, and even print non-PostScript fonts on a PostScript printer! However, in other respects - i.e. precise control of graphic resolutions, interpara spacing, ability to use all 35 PostScript internal printer fonts - Fleet Street still wins. It really does seem to be horses for courses!

On the question of PageStream and internal PostScript printer fonts, any idea where I can lay my hands on Adobe Font Metric Files for the 22 I can't use from PageStream? The Manual - written for the American market - reports that they can be downloaded from BBS's in the States. Is this true of the UK as well?

Wendy Durham

● The best source of support for PageStream seems to be direct from SoftLogik in the USA. So far they have responded pretty promptly to our letters and Faxes. As far as I know, there is still no official UK distributor. (If you have an Atari Laser you will need a replacement SLM804 driver from SoftLogik.

DeskJet Matters - Calamus DeskJet.CPD file

Before:

```
000002C0:   48 65 77 6C 65 74 74 20 50 61 63 6B 61 72 64 20   Hewlett Packard
000002D0:   44 65 73 6B 6A 65 74 00 00 00 00 00 00 00 00 00   Deskjet.........
000002E0:   00 00 00 00 00 00 00 DC 00 00 01 71 00 00 0F 81   .......Ü...q...ü
000002F0:   00 00 15 34 00 00 00 00 00 00 00 00 00 00 08 00   ...4............
00000300:   00 01 00 01 00 00 00 00 00 00 00 00 00 00 00 01   ................
00000310:   00 00 00 00 00 00 00 00 00 00 00 DC 00 00 01 71   ...........Ü...q
00000320:   00 00 15 ED 00 00 1E C8 00 00 00 00 00 00 00 00   ...ф...╚........
```

After:

```
000002C0:   48 65 77 6C 65 74 74 20 50 61 63 6B 61 72 64 20   Hewlett Packard
000002D0:   44 65 73 6B 6A 65 74 00 00 00 00 00 00 00 00 00   Deskjet.........
000002E0:   00 00 00 00 00 00 00 53 00 00 00 39 00 00 0F 81   .......S...9...ü
000002F0:   00 00 15 34 00 00 00 00 00 00 00 00 00 00 08 00   ...4............
00000300:   00 01 00 01 00 00 00 00 00 00 00 00 00 00 00 01   ................
00000310:   00 00 00 00 00 00 00 00 00 00 00 53 00 00 00 39   ...........S...9
00000320:   00 00 16 80 00 00 1F 80 00 00 00 00 00 00 00 00   ...Ç...Ç........
```

The US driver prints clean white ink-free pages on the UK SLM804!)

Serial Numbers

Martin Walsh - Forum STA5
John Watkins - Forum STA10

I can't really understand why there is so much interest in decoding the serial numbers on Atari kit, but since people insist on talking about it, my mouse has the serial number P1585106942, which according to John Watkins means that it was 'built' in May 1985. Does this mean that it is the oldest working Atari mouse in Britain?

Les Kneeling

● The latest batches of STE's are being manufactured in China; UK specification Mega STE's are being delivered from Outer Mongolia on the backs of blind donkeys.

Signum/Script Tips

John Ridge - Forum STA7
Dr J M Bowsher - Forum STA7
J I Logan - Forum STA10

I am prompted by J Logan's letter in STA10 to draw attention to the very fine set of Signum fonts provided in the "SCISET" package available from Retsum Computing Solutions (7 Murray Terrace, Alford, Aberdeenshire, AB33 8PY).

SCISET's designer, Dr Graham McMaster, has done a superb job in creating a magnificent combination of fonts which exactly fit the seven slots provided within Signum. Chemistry, phonetics and many special mathematics symbols are included, together with joined letters (æ, etc.), a full range of accented letters and the common ligatures (ff, fi, fl, etc.).

Supplied in 24-pin and laser styles only at an all-in price of £50, the "SCISET" fonts come with a well produced manual which, in addition to explaining the "SCISET" philosophy, gives plenty of tips on how to use the fonts to their best advantage. One extremely useful bonus is the availability of hard spaces, a facility not provided in the basic Signum program.

John Bratby

TOS 1.4 Bugs

Q I hope someone can help me with the following problem which has been causing me some irritation since I upgraded my TOS to version 1.4 eighteen months ago.

At frequent but irregular intervals, the system is reading a **single** mouse click as a **pair of clicks (not a double-click)**. The effect is that in menu-driven programs with cursor-based text windows such as word processors (First Word Plus and WordWriter) or source code editors, when selecting an item from a drop-down menu the single mouse click often causes the text cursor to jump to where the mouse was positioned when the menu item was selected. The mouse appears to move the cursor "through" the drop-down menu. It is an understatement to say that this should not happen.

While the behaviour I describe is irritating, especially when trying to perform block moves of text, it does not kill the system. There is another effect which causes the system to crash whilst using the word processors. When using the mouse to drag the slider bar, the mouse occasionally changes into a pointing hand and starts to draw a "rubber box." If it's noticed in time and the hand returned to the box's origin, the system can be prevented from going completely catatonic and requiring a warm boot.

I know a good deal about the GEM routines and this should not happen when v_slide or h_slide are invoked, so I can only conclude that the mouse is, again, somehow clicking "through" the slider bar to the text window beneath.

And now I blow any credibilty by giving you the details of my system which can only be described as a **highly** mutated, late 1986 vintage, E-revision 520ST^{M} (yes, before they stuck floppy drives inside) of North American origin (I am an ex-pat Canuck). It is now sitting happily inside an Atari Workshop Tower unit with 2.5 Meg of memory (which was installed prior to the TOS upgrade) connected via the MMU and Shifter. Owing to the machine's origin, the keyboard vectors have had to be patched so that I can use the "\" key (which sits under the Delete key where God intended!).

These are the only details I feel are relevant to my problem which insists on recurring regardless of the drive I boot from, the Auto files run on startup, or the DA's installed. I have tried using a different mouse, replacing the TOS chips with a new set, replacing the GLU chip, and even using a new keyboard to no avail.

The Atari Workshop were very helpful in supplying the parts listed above while trying to isolate the problem, but had never seen or heard of its occurrence before. When you've all finished laughing, could anyone who's ever witnessed or experienced this problem please share the experience, especially if the cause was found and fixed!

Chris Richardson

● We've had the first problem with boring regularity on an STE with First Word Plus (v2.12). Replacing Word Plus with Rédacteur removed the problem. I understand that the most recent version of Word Plus should also solve the problems you describe.

40 Folder Bug and TOS 1.4

I have seen several statements to the effect that the 40 folder bug has been cured in TOS 1.4. I recently upgraded to TOS 1.4 and therefore threw away the program FOLDR200.PRG which I had been using.

This was a serious mistake. The bug has not been cured - it just doesn't occur as often.

I was running one of the TEX DVI viewing programs which searches a very large number of folders for its fonts. The program suddenly stopped with a worrying message of the form:

SYSTEM HALTED
MEMORY OVERFLOW
Use FOLDRxxx program

(I'm not sure of the exact words as I was too worried to write them down at the time.)

The dreaded bug had in fact corrupted the directories in one of my hard disk partitions. It was not possible to sort out the partition by deleting files or by using the standard type disk check programs and I had to reformat the partition. I then re-installed FOLDR200.PRG and tried the same sequence of actions as before and the viewer ran with no problem. Since then I have always used the fix and have not had any further problems.

I would therefore urge everyone with a hard disk drive to use the FOLDRxxx.PRG program even with TOS 1.4. (This probably applies to TOS 1.6 as well.)

Henry Moring

Calamus

A little information regarding the use of the Calamus Demo on WPR.26. These may be specific to my system (a 2Mbyte colour STE) but some people may find them useful. The demo will work on a colour system with the mono emulator, although things can move slowly and some of the icons may be difficult to work out.

The demo appears to crash at the end of loading if no control panel accessory is loaded. I have found that the Atari Version and James.Acc both work equally well although I haven't tried any others.

With regard to fonts - the public domain Calamus fonts won't work with the demo without conversion by Fon-Conv on disk FON.24. Again, this program only works in mono, but will work with the mono emulator. However, if you boot with the mono emulator in your Auto folder (as normal), Fon-Conv loads but when you attempt to convert a font the alert message "The system does not have enough memory for this directory" appears. Aaarghh! Where did my 2Mb go? If, on the other hand, you boot into medium or low res and run the mono emulator from the desktop you get a squashed desktop. Select High Resolution from the Set Preferences menu and the desktop appears full size. Fon-Conv should now run without problem.

Now for some queries:

a) Is it possible to centre text (single lines) within a frame in the Calamus demo?

b) Is it possible to load files produced on the PC program Harvard Presentation Graphics? I don't know the format of these files, but is there a suitable program in the Public Domain (either ST or PC) that will convert them to something I can use?

c) Is there a version of GDOS available in the Public Domain for use with OPUS spreadsheet? If not, where can I get the real thing from?

Mark Fairweather

● a) According to the Calamus manual selecting a block of text with the "I" cursor and then clicking on the 'centered text icon' will have the desired effect. As I haven't the foggiest idea how to describe the appropriate icon, let alone how you get to it, here's a picture. (I'll bet that it's only when they started giving telephone support for Calamus that its designers dicovered what a bind these wretched icons are!)

b) There is nothing on the ST that will support Harvard Presentation Graphics file formats. Try PC graphics utilities that will export in GEM or IMG formats.

c) Whilst GDOS is not PD, we do have a license to supply it. The drawback to this is that it may only be supplied to registered users of Fontswitch and Fontkit Plus. If you have one of these packages then we can supply a disk containing GDOS, plus the associated Fonts, Printer and Meta drivers. Specify your printer when ordering. Additional Meta fonts may be readily generated using Fontkit Plus 3.

Technical Information (GDOS)

Paul Chamberlain - Forum STA3
Leslie Dewhurst - Forum STA3
Iain Laskey - Forum STA6
Iain Laskey - Forum STA9
Alan R Cooper - Forum STA10
Dr D M weber - Forum STA10
Marcus Bointon - Forum STA11

I It would certainly be useful if Atari did publish GDOS details for non-developers. However, there is more available from third party sources than recent Forum discussion suggested. I've found Philip Balma and William Fitler's book "Programmers' Guide to GEM" (published by Sybex) to be particularly useful. This explains how to use the various GEM functions, rather than just listing them. It was published in 1986 and concentrates on GEM on the PC. However, the chapters on the VDI and Advanced GEM Topics include almost all the information needed to write programs using GDOS fonts and writing to printers and metafiles.

For ST-specific programming information, the "plus" part of HiSoft's Wercs Plus package comes with a 16-page photocopied booklet about GDOS. This is rather less detailed than HiSoft's usual standard of documentation, but it does give useful hints on programming for GDOS in Basic, Assembler and Modula 2 and explains the extended VDI calls available when GDOS is loaded. I got my copy in 1988 and HiSoft may have added examples in other languages since then, though I've not been advised of any upgrades.

As well as the standard Atari GDOS disks, Wercs Plus includes example GDOS programs in HiSoft Basic and FTL Modula 2. In practice, I've found the examples more informative than the documentation. (Also included are the files needed for producing customised GDOS printer drivers, but these can only be used with Alcyon C and the Atari or Digital Research linker.)

Keith Baines

DC Topper

Q I seem to have found an incompatibility between UIS III and DC Topper which could have serious consequences.

If both UIS III and DC TOPPER are active and UIS is called to show a disk in drive A, and then a disk is put in drive B and formatted with UIS, it is sometimes the disk in drive A that gets formatted! This does not always happen. The conditions which seem to be necessary are: Drive A contents displayed in desktop; UIS called to format a disk in drive B; Drive changed from A to B (this is the important bit); On going to 'FORMAT' it is the disk in Drive A that is formatted.

Incidentally, with DC TOPPER active the UIS buttons for selecting A, B, CANCEL, OK, FOLDER and maybe some others, do not need a key click to be activated; the mouse arrow just has to pass over the button. This also seems to occur with some options in desktop menus.

I find both DC TOPPER and UIS III very useful but they must certainly by used with caution.

P W Wreford

● I'm afraid that it is DC Topper that is to blame. When UIS is called from its accessory DC Topper continues as if it is still working on the desktop, sending a left mouse-click every time it passes over a in-active window. These mouse clicks are acted upon by UIS. The results you get will hinge on the number of windows you have open on the desktop, where they are, where UIS is, and where you move the mouse on the UIS III window! Hence the erratic nature of your problem. The only way around the problem, pending a new version of DC Topper, is to close all desktop windows before calling UIS.

File Selectors

Q Looking through some early issues of ST Applications, I came across a question about ST Logo in issue 3. The answer was given that ST Logo will work correctly with TOS 1.4 if an alternative file selector is used. This triggered my memory of a programming incident.

A couple of years ago I was writing a club membership database in GFA Basic. One of the included facilities was a readout of the free disk space, using the GFA function DFREE(). Naturally, I checked this facility, both in interpreted and compiled forms, and it worked correctly.

Shortly after I delivered the program to a friend, he complained that the free disk space function was giving nonsensical answers. At first I thought that this was a result of different TOS versions, but this proved not to be the case. After much head scratching I eventually worked out that, regardless of TOS version, the function always gave correct results when running under the interpreter, but when compiled it would give correct results only if an alternative file selector was installed.

Does anyone know why the file selector has such apparently unrelated effects?

Eric Chapman

ST Logo and TOS 1.4+

I It is possible to get Atari Logo to work with TOS versions 1.4 and 1.6; Logo loads with these versions of TOS, but when you try to load a file you get an 'out of memory' message.

For some stupid reason LOGO tries repeatedly to allocate all available memory until malloc(-1) returns zero. After that it does its Mfree().

To solve the problem you have to apply the following patch using some kind of a disk utility.

The patch starts at offset $5C (relative to he beginning of the file).

original: $4eb9, $0001, $2fec, $4a40, $670c, $2f00, $4eb9, $0001, $2fba, $588f, $60ea

patched : $4a79, $0001, $2fec, $4e71, $4e71, $4e71, $4a79, $0001, $2fba, $4e71, $4e71

Jan Willamowius

Sagrotan

I Greetings to English Atari ST users from Atari ST User Group Norway (STUG Norway). Viruses on the ST have become a serious problem here in Norway. As PD librarian for our user group I run a library of almost 2000 PD disks, lots of them coming from other members. I have discovered that almost no Norwegian ST users are aware of the virus problem. In other words - they do not know they are spreading it!

In order to try to contribute to a solution I have translated into English what is regarded as the ultimate virus-killer in Germany. I first contacted the programmer and got his permission to do the translation. He also told me that he no longer supported the program since he is working on a commercial version. The latest version of the program is 4.17. It was not possible to translate this version, since much of the text was coded. The latest version that I could translate was 4.14.

What does Sagrotan do? It will check the ST's

memory for resident viruses, check the boot-sectors of floppies and hard disks, search for linkvirus, and finally, repair damaged boot-programs! To do this the program has large libraries with virus and bootsector information. The great thing about Sagrotan, unlike most other virus killers, is that you can add to these libraries.

With Sagrotan 4.17 it is possible to repair most commercial auto booting games. What you have to do is to store a copy of the boot-program in the Sagrotan bootsector library immediately after you have bought the game. If you get trouble you just start up Sagrotan 4.17, go to the function "Bootsector reparieren" (=restore bootsector - I told you 4.17 was impossible to translate!), scroll down the bootsector menu until you find the one you want, and click on the "reparieren" button.

When I started using the program, it didn't recognize the EVIL virus ("Evil - a gift from old Nick"), even though it stopped and told me that the disk was infected by something. Using the built-in disk monitor I was able to read the bootsector, identify the virus and add it to the library.

Here is a list of viruses recognized by Sagrotan: AIDS - Gauweilers Rache V 3.0, Antivirus from PD 141, BPL-virus, Bildschirmvirus, Bombenvirus, Evil! A gift from old Nick fast-load-virus, Ghost virus, Kobold #2 Münchner virus, BHP "VIRE87", OLI-virus, Schweizer virus, VDU-Antivirus (harmless), Virus TU-München (FUN or MAD-virus), Virus aus PD-Sammlung BPL-virus, Virus aus c't 7/88.

At STUG Norway we have started collecting viruses and bootsectors and hope to build an up to date collection of bootviruses so that Sagrotan will to repair all virus-infected games disks.

We need help!

We hope that all readers of this great magazine can help us by sending us copies of infected disks; or even better, to get a copy of Sagrotan, save all virus and bootsectors not recognized by Sagrotan to the program's library and send a copy to The ST Club. They will forward it to us. Everyone contributing this way will get have their disk returned with the latest update of the library (if they include an SAE).

If you get any problems with the translated version, please contact me, and I will try to sort it out. Good luck with your virus hunting! My complete (very un-English) address is:

Stein A. Jensen
STUG Norway
N-3630 Rødberg
Norway

● Version 4.14 of Sagrotan is on Disk Mag DMG.25; versions 4.14 and 4.17 are on disk UTI.176.

Grey Script

I Several times I have seen this package offered for sale at £50. I must warn potential buyers, however, that all the 'cheap' offers are for the US version. This does not work with UK TOS - it just throws up a dialog asking the user to contact Application Systems Dallas. This is most unfortunate as the package looks very attractive - Script for half the price Signa charge for it, and a spelling checker is included, the lack of which was perhaps the only reservation that UK reviewers had of the UK version.

John Watkins

TOS 1.6 Bug
(SPC Bug)

Peter T Wilson - Forum STA5
Martin Walsh - Forum STA 8

I Having recently acquired a 520STE with TOS 1.6 and 2 Mb RAM, I too have been faced with the "File can only be viewed" dialogue box when double-clicking on a .PRG file, only to have the program (sic) run correctly at the second attempt. However, out of my collection of thirty to forty applications, only one ever exhibits this behaviour - a copy of the Mark Williams PD RDE RAMdisk, modified for the STE by Alan Evans. In the accompanying documentation (which I downloaded with the executable from the Lancaster PD archive) Alan mentions that this executable has been "packed" using PFXPAK - I wonder if this might be causing the problem? Unfortunately, not having a suitable unpacker to hand I cannot test my hypothesis.

Apart from this minor irritation I find RDY_STE to be a reliable workhorse which I now use every day to provide 1 to 1.25MB of reset-proof fast storage. I'm passing on a copy with this note in the hope that the ST Club can help make it more accessible to STE owners who do not have access to the Lancaster archive.

Andrew Watson

● RDY-STE is on Disk Mag DMG.24.

STOS Problems

Q I'm writing to ask if any of your readers are able to help with some problems I've been experiencing with Mandarin's STOS.

The first major problem I've encountered is that text co-ordinates are shifted some 3 lines upwards when testing programs via the interpreter. On compilation, the text co-ordinates function correctly.

The second problem I've encountered is that some commands fail to execute at certain points in programs. This seems to happen almost randomly and sometimes even seems to fix itself! For example, a command placed by itself on a line may fail to execute. Adding an identical line directly after the troublesome command usually seems to cure this.

Another series of problems appear when working with strings. Splicing two strings together often returns absolutely nothing. Subtracting strings tends to return only around half of the expected result and performing a STRS operation on a number always seems to add additional, unwanted spaces in the answer.

Finally, the PACK instruction almost always generates an error. It appears that the packed picture file length is different to the figure returned by the command.

Has anybody else experienced these problems, and if so, have they found a solution? I have upgraded my BASIC to version 2.62 and am using TOS 1.6 on a 2Mb STE.

I have tried to contact Mandarin and the STOS user group but have not been able to get a response.

Paul Bocij

Reading Tablets

Q I have access to a Summagraphics Tablet with a Puck and Stylus; I would like to be able to read the co-ordinates of the Puck through the RS232 Port. Have any readers a short routine in either Fast Basic or STOS which will do this, or can somebody describe for me what such a routine would have to do once it has read in a whole lot of bytes? I have done this and printed them to the screen but now a REAL brain is needed.

David J Fright

French ASCII

A Goodhew - Forum STA7
Roland Young - Forum STA9

A Telex users will be aware that there are some keys which cannot be used internationally, only for messages within the UK. But indeed one can use them for international traffic, once one has found out what characters are printed at the other end. Å, Ä or Æ, and Ø or Ö can be transmitted to Nordic countries in this way. I do not know what the full range of possibilities is - can someone else oblige? British Telecom perhaps?

Anthony G Curwen

FORUM

ST Applications
2 Broadway
Nottingham
NG1 1PS

FORUM

DESKTOP DISCUSSIONS

The Power of the Pen

Atari has never had much success with the ST in the business market. William Hern looks at the new models, and finds a glimmer of hope for the future.

Ever since the ST's launch in 1985 Atari have been keen to promote it as a business machine. Low cost, a reasonable degree of power, and large memory capacity have all made the ST a viable computer for the workplace. However, as we all know, the ST has had little success in a market dominated by the PC and its clones and the Apple Macintosh.

Atari's latest bids for business success centre around laptop and pen-driven versions of the STs along with a number of new PC compatibles. Are these products any likelier to succeed where previous models failed?

I'm not too optimistic. The laptop ST, the ST-Book, is well designed but doesn't really offer anything over the notebook PCs that are currently flooding out. The pace of change in the notebook market is terrifyingly quick - companies are having to release new models every six months to keep their product ranges competitive. With Atari's notorious launch delays, I simply don't think that the company can keep up. The traditional stumbling block due to the lack of business software won't help sales either. However, if it retains the MIDI ports then at least the music industry should love it.

The Atari PCs face similar problems. To succeed in the business market you need to be either a company which sells machines with status appeal (such as Compaq or IBM) and so be able to charge premium prices or a small company that can exist on selling machines with very low profit margins. Atari has neither the brand name nor the backroom organisation to compete in the bargain basement. That's the reason that Atari PCs haven't succeeded in the past and I can't see what has changed.

The pen-driven laptop, named STylus, is a different matter. There's no doubt that it is an ambitious project but the prize for success is great. The pen-driven market is extremely young and there are few manufacturers offering products yet. If Atari can get the machine on sale soon and at the price that it has promised then it could do well.

Pen-driven machines offer tremendous opportunities for introducing a whole new type of user to computers. The first time that I used one I was astonished to find that it felt more like an intelligent piece of paper rather than a computer in use. For this reason, pen-driven computers should be attractive to people who have traditionally hated using computers, a great and as yet untapped market.

I'm worried, though, how suitable a work environment GEM and TOS will prove to be for a pen based machine. Ditching the keyboard in favour of a pen means a radical shift in the way that the user interacts with the computer. Take word processing for example. On a pen-driven computer the cursor becomes redundant as the user simply writes text on to the screen where he or she wants to. Block operations are replaced by gestures, a typical operation such as deleting a block of text would be carried out with a pen by simply scoring through the target text. Will Pen GEM/TOS be able to offer this simplicity?

Looking at the other pen-based machines on the drawing board there are two rival operating systems competing for dominance. Firstly there is Microsoft's extension to its Windows environment called Pen Windows. The other contender is PenPoint from Go Corporation, a four-year old company specifically founded to develop pen-based computing. Both approaches have their pros and cons. With Pen Windows, existing Windows applications can be quickly ported to Pen Windows but it suffers from having its pen-specific routines tacked on to an existing GUI. PenPoint has the simplicity gained from being designed right from first principles but applications will have to be written from scratch as well.

It's impossible at this point to know which of the two will succeed but it's almost certain that no manufacturer apart from Atari will opt for the TOS/GEM combination. Once again Atari could find itself pushed to the periphery of a market owing to marketing an incompatible product.

The fundamental point is that pen-driven machines are likely to be for applications different from their desktop counterparts. Being able to transfer data between the two will be important but using the same software on both will probably not be. Not many Atari pen-based computers will be sold on the strength of its ST compatibility but rather on the ease of use of its operating system and the quality of the application software. Incorporating Pen Windows or PenPoint would give the machine the advantage of being part of a developing industry standard.

Since the late seventies, Atari has been stuck with the image of a games only company. A pen-driven machine, properly designed and with the right operating system and application software, could finally give it the business credibility that it so desperately craves.

Rounding Off

I saw an interesting article in the New York Times recently. An indoor firing range in Atlanta allows customers to rent firearms and bullets and shoot anything they like on the condition that it is already dead and will fit through the doorways. During the recent Comdex computer show the range had heavy patronage from computer users.

The owner, Paul LaVista, said, "I'm not a computer whizz but one group brought what looked like a hard disk and blasted it. Another bunch brought in some kind of technical manual. The thing was enormous, about 2000 pages. They rented three machine guns - an Uzi, an M3 grease gun, and a Thompson - and when they were through it looked like confetti."

But these were not the first computer users to visit the range. LaVista continued "A year ago seven or eight men carried in a giant old Hewlett-Packard printer. I ran an extension cable to it, and just as it started to whirr and spit out paper, they blasted it."

Anyone care to nominate pieces of ST-related hardware that deserve the same fate?

William Hern

Programmers' Forum

On this month's agenda for ST Applications' regular programming column: more on the dangers of vector-grabbing desk accessories, and a request for information on how GEM bindings work.

Vectors and Desk Accessories - Part 2

Readers with good memories may remember that part of the last issue of Programmers' Forum was devoted to the issue of desk accessories which grab system vectors, and their associated problems. To summarise, the main snag with such programs lies in the way a colour resolution change is performed. Accessories are reloaded, but the system is not properly rebooted. Therefore, any vectors which have been redirected by a desk accessory will be rendered invalid instead of being reset to their initial values. There is no problem with monochrome/colour changes because a full system reboot is performed.

In the article, I suggested that, as a partial solution, an accessory could attempt to get round this problem by using the XBRA protocol to detect a reinstallation. However, this does depend on other programs being XBRA-compliant, and may fail anyway under some circumstances. There are two more robust ways of achieving the desired effect, but they do require slightly more involved programming.

The best way of solving the problem is to avoid it totally. To do this, one has to accept the official position that accessories should not intercept vectors. The vector grabbing is done by an AUTO folder program (which will be untouched by a low/medium resolution change). A desk accessory is then used to control the behaviour of the AUTO folder program, as required by the user. This method should work on all machines and TOS versions.

However, this does require a clean method of communication between accessories and other (in this case, non-GEM) programs. This is a huge topic, and requires much more space than we have here. Do you detect a cop-out here? Wrong! Beginning in January, Programmers' Forum will be addressing the whole issue of inter-program communications, in depth, with disturbingly graphic examples!

Another approach

The second method for solving the problem is quite definitely a hack. It is not TT compatible, and will require slight modification to be MegaSTE compatible. Therefore, don't use it in any software you plan to distribute. However, it should serve as good insight into a tricky part of the ST's operation.

The basis of the idea arises from the clever way in which NeoDesk circumvents the problem. It does this by forcing the system to be properly reinitialised when a colour resolution change is requested. After presenting a warning box, it changes the DESKTOP.INF file to correspond to the new resolution and then performs a real warm reboot. This resets any vectors which might have been changed, and the system comes back up in the desired resolution. The (acceptable) price of this method is the extra time taken to reload all the AUTO folder programs.

We could only rely on this if a vector-grabbing desk accessory is always going to be run under NeoDesk. However this will rarely be the case, so we must consider building some code into our accessory to emulate this function. What we would like to do would be to splice into the XBIOS trap, and catch all calls to the **Setscreen** function. This function is the correct method to use for changing between resolutions. We would then determine if the new resolution is the same as the one the accessory was booted in. If not, we could simply alter the DESKTOP.INF file and then force a system reboot, just like NeoDesk.

As you might have guessed, there is a major snag. As far as I know, there is no way to legally intercept the Atari Desktop's call to change the resolution. This is because it does not use the **Setscreen** call to do its work. As a guess, it probably calls the ROM routine directly. Such charming behaviour renders the obvious approach useless. NeoDesk has no problems because the Atari Desktop's resolution change is never used.

All is not lost though; we simply have to delve a little deeper into the process of changing the resolution. We can get around the Desktop's unfriendliness by making use of one of the actions of the resolution-changing routine. The basic functions of this routine include shutting down the existing GEM system, and initialising GEM for the new resolution. As part of the procedure, the routine terminates all the accessories, frees their memory and then reloads them under the new resolution. This is both the cause of the original problem, and a method for its solution.

The key observation here is that this manipulation of desk accessories is unique. Under no other normal circumstance is an accessory removed from memory and its memory freed. We can detect this event by hooking into the GEMDOS trap and waiting for the system to attempt an **Mfree** call on the accessory's basepage memory. When this call is spotted, we can assume that a resolution change is in progress, manipulate the DESKTOP.INF file accordingly, and reboot the machine.

An assembly language subroutine to do this is presented in Listing 1. The main routine assumes that it has been spliced into the GEMDOS trap, and that the address 'block' contains a pointer to its basepage. The initialisation code supplied will do this for an accessory written in Lattice C v5.

The routine is a fairly ordinary trap handler, but it does not make any allowance for non-68000 processors. This would have to be altered if the program was to be run on a TT or similar machine. The handler code is prefixed by a test on an internal flag 'recursive', of which more later. After locating the function code, the routine checks first that it is a **Mfree** call, and if so whether it is directed at the accessory's basepage. If both conditions are fulfilled, we are almost certainly in the middle of a resolution change. If you wanted to be totally sure of this, you could add an extra test: check that the return address on the stack lies in the ROM area (defined by system variables).

Having detected the desired event, the program has to alter the DESKTOP.INF file. This is done by loading the file DESKTOP.INF from the drive which was used to boot the machine (usually A: or C:). The file is read into a memory block obtained for the purpose, and the file system prepared for writing an altered version.

All of these file handling tasks are done using normal GEMDOS traps. It might be suggested that this is not safe because GEMDOS is not reentrant. However, some thought will show that the routine is not making a reentrant call to GEMDOS: the trap call that invoked our routine never got as far as GEMDOS. As far as GEMDOS is concerned, we are still in the context of the TOS resolution change routine, albeit now in supervisor mode. Why does our routine use trap #1 calls to invoke GEMDOS rather than just using the old address stored earlier? Because there might be other programs in the vector chain which grab the **Fopen**, etc., calls, that would have ignored the original **Mfree call**. The 'recursive' flag is used to tell our handler not to bother checking these 'internal' calls, but to pass them straight on.

The rest of the program's actions are simple: alter the part of the DESKTOP.INF file that sets the resolution (see the program comments for details) and write the amended file back out to the disk. After this has been done, the program causes a warm boot by jumping to the TOS reset routine. Any error in the file handling causes an immediate reboot: there is no way we can print any useful error messages.

Program compatibility

Although it does not use any undocumented variables or ROM addresses, the routine does rely on observed behaviour of an internal TOS routine. It does seem unlikely though that Atari would change this routine in such a way as to break this code, without taking the opportunity to clear up the whole problem.

Additionally, the DESKTOP.INF modifying code will need to be altered before it can run on a MegaSTE with the TOS 2 desktop. At the least, this will involve searching for the NEWDESK.INF file and setting its resolution setting. I have no information on the NEWDESK.INF format. It may be however, that the new Desktop does its resolution change in a different (better?) way. Can any owner of one of the new machines enlighten us?

Furthermore, there are major problems with TTs. This is due to the order in which the various actions of the ROM routine are performed. The accessories are freed while the system is still in the old resolution and our code has no way to determine what the new resolution will be.

On the ST and STE this is no problem, as there are only two colour resolutions: if the code is called in low resolution, the new resolution will be medium, and vice versa. On the TT there are several colour resolutions, and this technique will fail.

Having said all this, the code should run happily on all basic ST or STe machines. Accessories using this code will not be compatible with programs like Karsten Isakovic's Chameleon which allow loading and unloading of desk accessories. It is not reasonable to expect to run any vector grabbing accessory in such an environment anyway, so this is no great problem.

GEM bindings - how do they work ?

A total change of subject now - from dodgy hacks to how to make use of a normal part of the operating system. One of the nice things about writing Programmers' Forum is that occasionally a reader sends in a really meaty letter, with lots of interesting questions to chew over. Just such a letter comes from ***Paul Simpson*** of Loughborough. This month we only have room for one of his questions, but this is one that may be of interest to many readers, particularly those starting out into assembly language programming. Paul writes:

> *I have read with much interest your column in STA and, in response to your request for problems, decided to write to you with a few of mine.*
>
> *I was most interested in the alternative form_do() function in issue 3. However, I have been totally unable to use it as I lack the know-how to implement the additional bindings for form_keybd() and form_button().*

This should be simple enough, but the details rather depend on the compiler system that you use. Paul uses Digital Wisdom C, about which I know nothing, but hopefully the following explanation should help. If not, it is probably worth asking the compiler publishers to implement the functions in their AES library. Alternatively, the publishers could send in a copy of the compiler, and Programmers' Forum will print the listings required !

What this question boils down to is 'how does a program talk to the AES?'. Details can be found in some books, but the following brief explanation for his specific application should provide a starting point for some experiments.

Programs communicate with the GEM system by means of several arrays of 16 bit words. Each array has a different function: some pass information to GEM, others receive information from GEM, and others are used to tell GEM what function to perform. The arrays required to communicate with the VDI were described in passing in the articles on GEM metafiles (Programmers' Forum columns in ST Applications issues 7, 8 and 9).

The AES requires the use of six arrays which hold data particular to the function being called. A seventh array containing pointers to the other six is used to let the AES know where they are. This array is known as the AES parameter block and can be represented in C as the following structure:

```
struct AESpb    {
                WORD *aes_control;
                WORD *aes_global;
                WORD *aes_intin;
                WORD *aes_intout;
                void **aes_addrin;
                void **aes_addrout;
                };
```

where `void **x` is used to indicate that x is a pointer to an array of pointers to objects of indeterminate type, and WORD is 16 bits wide.

Taking each array in turn:

`aes_control`: This is the key array which tells the AES exactly what to do. It has 5 elements, with the following functions: aes_control[0]. Also called 'opcode', this holds the code number for the AES function to be called.

`aes_control[1]` Also called 'sintin', this is the number of data items being passed to the AES in the AES_intin array.

`aes_control[2]` Also called 'sintout', the number of items that the AES is expected to return in the AES_intout array.

`aes_control[3]` Also called 'saddrin', the number of items of pointer data being passed to the AES in the AES_addrin array.

`aes_control[4]` Also called 'saddrout', the number of items of pointer data that the AES is expected to return in the AES_addrout array.

`aes_global`: This array contains global information about the application and the AES. Nothing in this array needs to be set in order to use AES functions, although it must have been initialised by the system during an appl_init call. Reserve space for 15 words.

The next four arrays are used for putting data into and receiving data from the AES. Their lengths are not fixed, but are determined by their respective entries in aes_control[]. Early documentation indicated that 128 words needed to be reserved for each array. However, many programs that I have seen only reserve sufficient space to cover the lengths declared in aes_control[]. Perhaps someone with a better knowledge of these things could confirm that the latter approach is guaranteed to be safe. Also, you may not assume that these arrays have their contents preserved across the AES call. Reload the arrays from scratch for each call.

`aes_intin[]`: Any integer data required for an AES function is passed to the AES in this array. This includes object coordinates, window handles and so on.

`aes_intout[]`: The AES uses this to return integer data such as return values (mostly useless).

`aes_addrin[]`: Used to pass pointers such as addresses of object trees to the AES.

`aes_addrout[]`: Used by the AES to return pointers. Most functions do not return pointers, rsrc_gaddr being the best known one which does.

Having set up the arrays, one simply calls the AES using the following incantation:

```
call_aes    move.l  #AESpb,d1 Point to
                    the AES parameter block.
            move.w  #$C8,d0   Magic number
                    to signal AES call.
            trap    #2        Do AES call:
                    d0-d2/a0-a2 trashed.
            rts
```

Implementation details

The GEM binding is the code which takes the normal AES C function call like

```
objc_draw(tree,0,8,x,y,w,h);
```

and places the arguments in aes_intin and aes_addrin, sets up aes_control according to the requirements for objc_draw and then calls the AES as above. The exact code to do this has to be tailored for each compiler system, as it requires a knowledge of the function calling conventions that the compiler uses. Also, unless you want to write a whole AES library from scratch, you will need to know the names used for the various arrays. These may or may not be documented, as strictly speaking they are part of the internal workings of the function library. However, it should be fairly easy to discover them: as a last resort one could compile a program such as

```
#include <gemlib.h>

main()
{
        appl_init();
}
```

link it in debugging mode to leave the symbol table attached, and then take a debugger or symbol table lister to it. The names will probably be similar to those used above.

If we assume a compiler system where arguments are all stacked as long words, such that the left-most is at the top of the stack, functions return results in d0, and the arrays are named as above; Listing 2 contains a binding for the objc_draw call above.

Using the same model, Listing 3 provides bindings for the functions that Paul wanted: form_keybd() and form_button(). These are rather verbose bindings - optimise them when you are confident of their function.

Next month

In next month's issue, we get down to the really tasty bit of Paul's letter: a Christmas treat for lovers of low-level programming.

Keep the letters coming in: hints on any subjects, or questions about programming problems should be sent to the address below. All contributions, no matter how simple or advanced, are most welcome. Do include a contact address in your letter. If you have an email address, that would be useful too. Please send a disk if there are large chunks of text or ASCII source code: I have no time to retype lots of material. Naturally, disks will be returned if an SAE is included.

Jon Ellis
Programmers' Forum
29 Ashridge Drive
Bricket Wood
St Albans
Hertfordshire
AL2 3SR

```
**
** Listing 1.
** Programmers' Forum, December 1991
**
** Fragment of code showing a method of
** forcing a reboot on a colour resolution
** change.  This should be installed in an
** accessory.
**
** Assembler: asm v5.06
** Written: 11th September 1991
**

**
** Define the symbols we use...
**

MAX SIZE  equ       $1060               Assumed maximum DESKTOP.INF size.

reset vec equ       $0004               System variables.
trap1     equ       $0084
bootdev   equ       $0446

GEMDOS    equ       1                   Operating system services.
Fopen     equ       $3D
Fclose    equ       $3E
Fread     equ       $3F
Fwrite    equ       $40
Fseek     equ       $42
Malloc    equ       $48
Mfree     equ       $49

XBIOS     equ       14
Getrez    equ       4


;================================================================
**
** Installation code for the resolution-change
** code.  In most cases you would probably want
** to amalgamate this into your accessory's
** installation code.  Note that, as written,
** this routine MUST be called in supervisor mode.
**  pbase is the Lattice C 5 variable that holds the
** address of the program's basepage.  If you are using
** another system, you should ensure that the internal
** variable 'block' is set up as a pointer to the basepage.
**

install   move.l      pbase,block       Copy our basepage address.
          move.l      trap1,wrecker-4   Grab the GEMDOS trap.
          move.l    #wrecker,trap1      Install us.
          rts

;================================================================
**
** This is the protection against nasty resolution changes.
** The initialisation code should splice this into the
** GEMDOS trap.  Before splicing in, the internal variable
** 'block' should be set to the start of the program's memory
** block.  Note the XBRA prefix for the handler.
**
          dc.l      'XBRA'
          dc.l      'RZCH'            Our XBRA ID: ReZ CHange.
          dc.l      0                 Old GEMDOS trap vector.

wrecker   tst.w     recursive         Recursive trap call ?
          beq.s     do check          No, we need to check malloc.
go old    move.l    wrecker-4,a0      Don't parse recursive calls,
          jmp       (a0)              Hand off immediately to system.

do check  btst      #13,(sp)          Were we in supervisor mode ?
          beq.s     1$                No, args are on user stack.
          lea       6(sp),a0          Point a0 to args on supervisor
stack.
          bra.s     2$                Skip on, all set up.
1$        move.l    USP,a0            Fetch the user stack pointer.
2$        cmp.w     #Mfree,(a0)       GEMDOS Mfree call ?
          bne.s     go old            No, pass on to system now.
          move.l    2(a0),a0          Fetch the address to be freed.
          cmp.l     block(pc),a0      Freeing our basepage ?
          bne.s     go old            No, give it back to the system.
;
; We have detected the unloading of this accessory.
; Now we have to fix the DESKTOP.INF file and reboot.
; Start by opening the file, allocating a buffer and
; reading the file into it.
;
          st        recursive         Pass on all of our GEMDOS calls.
          move.w    bootdev,d0        Make up the boot drive letter.
          add.w     #'A',d0
          move.b    d0,deskfile       Fix up the DESKTOP.INF filename.
code      pea       MAX SIZE          Maximum length for DESKTOP.INF.
          move.w    #Malloc,-(sp)     Get us a memory block for the file.
          trap      #GEMDOS
          addq.l    #6,sp
          tst.l     d0                Memory allocated OK ?
          beq       reboot            No, bomb out.
          move.l    d0,a5             Save the buffer address.
          move.w    #1,-(sp)          We will need R/W access to the file
          pea       deskfile(pc)
          move.w    #Fopen,-(sp)
          trap      #GEMDOS           Open the file.
          addq.l    #8,sp
          tst.l     d0                Any error ?
          bmi       reboot            Yes, ice the system.
          move.w    d0,d7             Save the file handle.
          move.l    a5,-(sp)          Space to read the file into.
          pea       MAX SIZE          Read at most about 4K of file.
          move.w    d0,-(sp)          File handle.
          move.w    #Fread,-(sp)      Read the file in now.
          trap      #GEMDOS
          lea       12(sp),sp
          tst.l     d0                Did any error occur ?
          bmi.s     reboot            Bomb it if so.
          move.l    d0,d6             Save the number of bytes read.
;
; Now reposition the file pointer so our amended
; block is written back to the correct part of the file.
;
          clr.w     -(sp)             Seek from start of file.
          move.w     d7,-(sp)         File handle.
          clr.l     -(sp)             Right to the start of the file.
          move.w    #Fseek,-(sp)
          trap      #GEMDOS           Do it.
```

```
        lea     10(sp),sp
        tst.l   d0                  Bomb out on any error.
        bmi.s   reboot
;
; At this stage we simply scan the buffer for the entry
; that determines the resolution. This is a line of the
; format      #E XX X?
; where ? is '1' for low res, '2' for medium and '3' for
; high resolution.
;
        move.l  a5,a0               Address start of file.
        move.w  d6,d1               Number of bytes in buffer.
        subq.w  #1,d1               Compensate for dbra.
        moveq   #'#',d0             Element prefix character.
1$      cmp.b   (a0)+,d0            Scan for it.
        beq.s   3$                  Got one, so process it.
2$      dbra    d1,1$               Loop until buffer exhausted.
        bra.s   reboot              Resolution not found: error.
3$      cmp.b   #'E',(a0)           Miscellaneous config information ?
        bne.s   2$                  No, must be another command so skip
;
; We have found the resolution configuration byte.
; All we do is to find the current resolution, and
; set the byte to the code for the other colour
; resolution.
;
        move.l  a0,a6               Copy the buffer pointer.
        move.b  #'1',6(a6)          Assume new resolution is low.
        move.w  #Getrez,-(sp)       Find out the current resolution.
        trap    #XBIOS
        addq.l  #2,sp
        cmp.w   #1,d0               Currently in medium resolution?
        beq.s   4$                  Yes, our guess was right.
        move.b  #'2',6(a6)          Wrong, our new res is medium.
;
; Now we just have to write out the updated file.
;
4$      move.l  a5,-(sp)            Write out from the buffer.
        move.l  d6,-(sp)            Holds the real length of the file.
        move.w  d7,-(sp)            File handle.
        move.w  #Fwrite,-(sp)
        trap    #GEMDOS             Write the modified file out now.
        lea     12(sp),sp
        move.w  d7,-(sp)            Finish up the file handling,
        move.w  #Fclose,-(sp)       ensuring that the file is written
        trap    #GEMDOS             to the disk.
        addq.l  #4,sp
;
; Now it is safe to reset the system.  This is
; also done immediately if there has been any
; error while the routine has been running.
;
reboot  move.l  reset vec.w,a0      Jump to do a warm reset.
        jmp     (a0)

**
** Routine data area.
**

deskfile  dc.b    'A:\DESKTOP.INF',0
block     dc.l    0
recursive dc.w    0

        END
**
** Listing 2.
** Programmers' Forum, December 1991
**
** Partial fragment showing a possible
** binding for objc draw, using the compiler
** model specified in the text.
**

** C code fragment...

        .
        .
        objc draw(tree,0,8,x,y,w,h);
        .
        .

**
** Assembler binding for objc draw: arguments on
** stack as long words with 'tree' just above the
** return address.  There are much faster ways of doing
** this, but this shows clearly what is going on.
**
**    Destroys:     d0-d2/a0-a2
**    Outputs:      d0.l = useless return code
**    Inputs:       On stack as per C call.
**

objc draw move.l  4(sp),aes addrin    Copy the tree pointer-> addrin[0]
          lea     aes intin,a0        Address intin array.
          move.w  10(sp),0(a0)        Start object (word) -> aes intin[0]
          move.w  14(sp),2(a0)        Depth of draw (word)-> aes intin[1]
          move.w  18(sp),4(a0)        X coordinate (word) -> aes intin[2]
          move.w  22(sp),6(a0)        Y coordinate (word) -> aes intin[3]
          move.w  26(sp),8(a0)        Box width (word)    -> aes intin[4]
          move.w  30(sp),10(a0)       Box height (word)   -> aes intin[5]
          lea     aes control,a0      Address control array to set up.
          move.w  #42,0(a0)           AES opcode for objc draw
          move.w  #6,2(a0)            Size of aes intin:  6 elements.
          moveq   #1,d0
          move.w  d0,4(a0)            Size of aes intout: 1 element.
          move.w  d0,6(a0)            Size of aes addrin: 1 element.
          clr.w   8(a0)               No entries for aes addrout.
          bsr     call aes            Call AES: see text for listing.
          move.w  aes intout,d0       Fetch the return code.
          ext.l   d0                  Make up to full width.
          rts
**
** Listing 3.
** Programmers' Forum, December 1991
**
** Simple bindings for form keybd and form button
** using the compiler model specified in the text.
** The C function definitions are:
**  form keybd(tree,cur edit,resvd,in key,&new edit,&out key);
**  form button(tree,cur edit,clicks,&new edit);
**
** See Programmers' Forum STA 3 for details of function use
** and for the information used to generate these bindings.
** Note that the listings in STA 3 use a different argument
** order for form keybd to that here.  Check and amend as
** necessary.  This order is consistent with Lattice C 5
** documentation and with the Lattice C v5.06 library.
**


**
** Assembler binding for form keybd, unoptimised.
**
**    Destroys:     d0-d2/a0-a2
**    Outputs:      d0.l = 0 if dialogue to be exited, else 1
**    Inputs:       On stack as per C call.
**

form keybd
          move.l  4(sp),aes addrin    Copy the tree pointer -> addrin[0]
          lea     aes intin,a0        Address intin array.
          move.w  14(sp),0(a0)        Reserved: 0          -> aes intin[0]
          move.w  18(sp),2(a0)        Code of key pressed -> aes intin[1]
          move.w  10(sp),4(a0)        Current editing obj.-> aes intin[2]
          lea     aes control,a0      Address control array to set up.
          move.w  #55,0(a0)           AES opcode for form keybd
          moveq   #3,d0
          move.w  d0,2(a0)            Size of aes intin:  3 elements.
          move.w  d0,4(a0)            Size of aes intout: 3 elements.
          move.w  #1,6(a0)            Size of aes addrin: 1 element.
          clr.w   8(a0)               No entries for aes addrout.
          bsr     call aes            Call AES: see text for listing.
          lea     aes intout,a1       Address output array.
          move.l  20(sp),a0           Fetch pointer to new obj. variable.
          move.w  2(a1),(a0)          Fill in the new editing object.
          move.l  24(sp),a0           Pointer to new key press variable.
          move.w  4(a1),(a0)          Copy processed key press.
          move.w  (a1),d0             Fetch the return flag.
          ext.l   d0                  Make up to full width.
          rts

**
** Assembler binding for form button, unoptimised.
**
**    Destroys:     d0-d2/a0-a2
**    Outputs:      d0.l = 0 if dialogue to be exited, else 1
**    Inputs:       On stack as per C call.
**

form button
          move.l  4(sp),aes addrin    Copy the tree pointer -> addrin[0]
          lea     aes intin,a0        Address intin array.
          move.w  10(sp),0(a0)        Current editing obj.-> aes intin[0]
          move.w  14(sp),2(a0)        Number of clicks     -> aes intin[1]
          lea     aes control,a0      Address control array to set up.
          move.w  #56,0(a0)           AES opcode for form keybd
          moveq   #2,d0
          move.w  d0,2(a0)            Size of aes intin:  2 elements.
          move.w  d0,4(a0)            Size of aes intout: 2 elements.
          move.w  #1,6(a0)            Size of aes addrin: 1 element.
          clr.w   8(a0)               No entries for aes addrout.
          bsr     call aes            Call AES: see text for listing.
          lea     aes intout,a1       Address output array.
          move.l  16(sp),a0           Fetch pointer to new obj. variable.
          move.w  2(a1),(a0)          Fill in the new editing object.
          move.w  (a1),d0             Fetch the return flag.
          ext.l   d0                  Make up to full width.
          rts
```

Traps for the Wary

Part Three: Hijack

by John Durst

Once one has cottoned on to the idea of altering the destination of the events arriving at the Exception Vectors on the ST, in the sort of ways we have been discussing in the last two articles in this series, there is no end to the fun to be had with them. One no longer has to take it as some sort of heavenly dictate that action B will inevitably follow action A. One can take a hand in the game oneself; be a higwayman; hijack the simple conformist routines.

Naturally there are dangers in monkeying with the status quo: it's as well to have a clear idea of what one is doing. But he worst that is likely to happen is a system crash and even the risk of that can be minimised by understanding what is happening at the relevant addresses and dealing with them carefully.

The most used Exception Vectors on the ST must be Nos. 33, 34, 45 & 46. These are the ones used, respectively by ordinary GEMDOS calls - Trap #1; extended GEMDOS calls (i.e. the AES & VDI calls, which go along with a great paraphernalia of "intin"s and "intout"s) - Trap #2; the BIOS calls (the lowest accessible level of the operating system) Trap #13; and the extended BIOS calls - Trap #14. Almost everything that happens with the computer does so by way of one of these Traps - and every one of them makes a call at one or other of these addresses.

So if you want to modify one of these calls, or just observe what happens, you can do so by lying in wait, Dick Turpin-wise, at these crossroads.

Fancy language aside, what you can do is the same trick we have discussed before; putting a new address into the vector, so that each exception, as it arrives, is sent to a routine of your own, which can examine its credentials.

The Demo routine I have included is a fairly pointless one, because I've had to keep it short, but it illustrates the principle; it examines all BIOS calls and sorts out any which are "B_CONOUT" calls - that is, trying to print something on the screen or at a printer. If it finds one, it makes any letters Upper Case and then sends the result on its original path to screen or printer.

The program is a "TSR" one: that is, Terminate & Stay Resident. There is a regular way of installing these programs, which has already been dealt with in "ST Applications": you will see it in the initialisation sections. Before it quits to the Desktop, it puts the address of our monitoring program into the "Trap #13" Vector and saves the original address in memory.

Every "Trap #13" call will be routed to the new program, where it arrives with the Processor in the "Supervisor" state, since it is an exception. All the information about the call will be on the (Supervisor) stack in the following order:

SP+0 word copy of Status Register SP+2 long return address

SP+6 word Call No.

SP+8... any parameters required by the Call So to check if it is a "BCONOUT" call, we need to see if the Word at SP+6 is "3".

If it isn't "3", we are not interested in it, so we get the genuine Vector address from memory and send the routine off to it.

A "BCONOUT" Call is made by stacking, in this order, (1) the character (Word), (2) the destination device (screen, printer etc.) (Word), (3) the Call number (#3) (Word) and then calling the Trap. So when we examine the intercepted Trap, the parameters are on the Stack in reverse order. The Call number, as we have seen, is at SP+6; the device number will be at SP+8 and the character word will be at SP+10.

The Demo routine collects the character Byte, juggles with it a bit to check if it is a letter and make it Upper case and puts it back in the same place on the stack. Then it jumps to the original Vector address. And there you are: ALL IN CAPITALS.

There's a variation on the Demo routine which has in it the germ of a useful program. You might like to try it out. Instead of altering the character, you change the Device word to zero.

If you do this, the output will go to the printer, even if it originally was destined for the screen...

In place of the section dealing with the character Byte, you would write:

```
clr.w 8(sp)
no_con movea.l savetrap,a0
jump (a0)
```

It makes for quite interesting viewing for a time, if your printer is on line. The trouble is, how would you get out of it again without a reset? You might have to include a "Trap #13" toggle.

-- THE LISTING --

```
* TRAP SUBSTITUTE ROUTINE DEMO
* this intercepts calls to the screen or printer (BCONOUT)
* & sets all letters to upper case

* initialisation
* first find our own size for a later Ptermres() call

        move.l  4(sp),a0            base page address
        move.l  #$100,d6            base page length
        add.l   $c(a0),d6           + code length
        add.l   $14(a0),d6          + data length
        add.l   $1c(a0),d6          + bss length

* now install our BIOS trap handler

        move.l  #trap13,-(sp)       new trap routine address
        move.w  #45,-(sp)           BIOS trap vector number
        move.w  #5,-(sp)            SETEXC
        trap #13
        addq    #8,sp
        move.l  d0,savetrap         save old vector address

* get out of here

        clr.w   -(sp)               return code
        move.l  d6,-(sp)            amount to keep
        move.w  #$31,-(sp)          P_TERMRES
        trap    #1

* NEW BIOS TRAP ROUTINE
* this tests for a ``BCONOUT'' character output call & checks it
*
* we shall be in SUPER state, with S_STACK as follows:
* (0) W. STATUS REG; (2) L. RETURN ADDRESS;
* (6) W. CALL No., followed by parameters

trap13: cmpi.w  #3,6(sp)            BCONOUT call?
        bne     no_con              no

* the word holding the character is on the stack
* at 10(sp): the byte with the character code is 11(sp)

        move.b  11(sp),d0           get the character being sent
        andi.b  #$DF,d0             make it upper case
        cmpi.b  #"A",d0
        blt     no_con              only accept letters
        cmpi.b  #"Z",d0
        bgt     no_con
        move.b  d0,11(sp)           replace character

* get on with the routine

no_con: movea.l savetrap,a0         get genuine trap vector
        jmp     (a0)                and go to it

        SECTION BSS
savetrap        ds.l    1
```


Fontkit Plus 3.4

New features include:

1. The ability to read and write GEM fonts with a non-FNT extension (e.g. That's Write italic fonts. PC fonts).
2. The ability to read and write GEM/3 (PC) fonts.
3. Font compression has been significantly improved. The 24-point Century laser font compresses from 72k to under 10k.
4. Support of an extended GEM-font format which contains additional information. including font resolution and fractional point sizes.
5. Cal2Gem allows positive and/or negative horizontal offsets to be specified. and there is a character table option which is useful for generating That's Write fonts.
6. Hp2Gem can now read Laserjet-3 compressed fonts.
7. The 'font parameters' dialog contains a full resolution parameter. Clicking on the point size. resolution. or linespace value causes it to be updated to match the other (two) values.
8. 'Remove dots' (in the Edit menu) has an extra option: 'remove inner dots' removes alternate dots within a character outline while leaving the outline intact (a kind of aero effect). This can be used to reduce the amount of ink used in printing Deskjet fonts.
9. 'File type: none' option causes Fontkit to load the 8 x 16 system font without displaying a file selector.
10. Includes Trimfont and Fontxpander - see box opposite.

Trimfont GEM-font manager for the Atari ST

- Compress GEM fonts by up to 90% - save space on your hard disk. or use more fonts with floppy-based systems.
- Optimize GEM fonts by removing unwanted foreign characters.
- List or change ID numbers - great for writing new Assign.sys files.
- Includes Fontxpander - a memory-resident program which automatically decompresses fonts as they are used by GDOS programs.
- Compatible with standard GDOS programs such as Timeworks Publisher. Calligrapher. and Wordflair.

Use compressed fonts with GDOS programs!
Cost: £9.95

Prices and Upgrades

Fontkit Plus 3.4 - £19.95
Trimfont - £9.95

E: Fontkit Plus 1 to version 3.4 (£11.95)
F: Fontkit Plus 2 to version 3.4 (£7.95)
J: Fontkit Plus 3 to version 3.4 (£6.95)
K: Fontkit Plus 3.2 to version 3.4 (£5.95)

Please specify the upgrade code (E, F, J or K) and return your master disks; all upgrades include new manual pages.

Current Fontkit Plus Users, please note that Trimfont will be included in version 3.4 of Fontkit Plus.

CAD Column

Joe Connor reviews the latest CAD-related developments at the Atari Messe in Düsseldorf.

Technobox Software GmbH: Since Silica Systems were appointed UK distributors for Technobox products there has been a deafening silence regarding the future of Campus CAD, which dominated the UK market for some time. I chatted with Michael Hagelganz, Technobox Sales & Marketing director. He explained they had been developing their products in two areas. Campus CAD evolved through Drafter, an enhanced and updated Campus, to Technobox CAD/2. This high end professional product is available, in Germany, for the Atari ST/TT and PC in Windows 3 guise. Drafter 2 will shortly be released in the UK but Michael only expects CAD/2 to leap the channel if a demand can be demonstrated. Both Drafter and CAD/2 still retain the look and feel of Campus and after trying out both versions I was soon at home with the new pop-up menus and extra icons. Symbol libraries, .GEM metafile and .DXF conversion are included. Other features include multiple fonts, programmable hot keys and unlimited layers. Since the Show Silica Systems have been in touch to confirm that Drafter 2 will shortly be available for £299.99 inc VAT and also a free Marconi Trakball worth £59.99.

Computer Technik Kieckbusch GmbH were demonstrating their own GEO 2000 Tower. It is available with either ST/TT built in and usually sold as part of a complete CAD System complete with CADja software, trackerball and support. The English V1.4 of CADja is now available (from Expressworks Ltd. in the UK).

CRP Koruk were demonstrating their range of digitisers with DynaCADD (they are the German DynaCADD distributors). I had already tried an A3 digitiser and concluded they were not for me, but I liked the feel of the A4 version so maybe I'll reconsider.

A DynaCADD Mac version is nearing completion and work is under way on Unix, SUN and Next versions, so no upgrade problems for existing users! Reprints from 68000er ST Magazin, a leading German ST publication, were being handed out, which last month praised DynaCADD V2.0 very highly. The reviewer found NO weak points in the conclusion - he should have seen my wish list.

VHF Computer, the Platon producers, had a large stand completely covered in real circuit boards. Platon V2 was producing prototype boards using a table top mill/drill machine.

Platon faces stiff competition in Germany with PCB layout, Route It!, Platine ST and Connecti-cad none of which (as far as I know) are marketed in the UK. Expressworks market this product in the UK.

GFA Data Media were not exhibiting but Draftplus V3.13 has recently been reduced to £75.00 inc VAT, p&p (from £100).

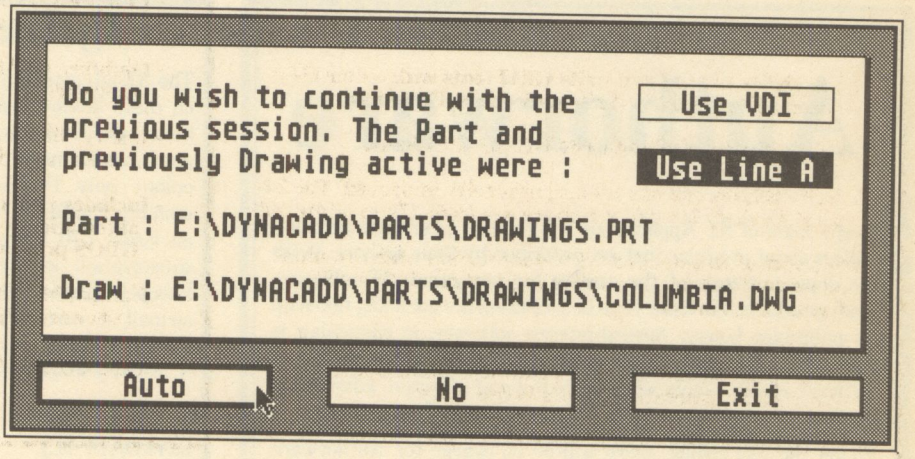
Reflections

It appears that the writing is on the wall for Atari based CAD (and other serious software). Major software producers, Ditek with DynaCADD and Technobox with CAD/2, are scrambling to implement versions on other platforms. I agree with the observations made by Günter Minnerup in Sticks and Stones Issue 10 and note with interest that Atari are well advanced with work on System V, their UNIX operating system for the Atari TT. Perhaps news of Apple and IBM collaborating will prompt Atari to 'get into bed' with Commodore!

Contacts

Silica Systems Ltd; 1-4 the Mews, Hatherley Road, Sidcup, Kent, DA14 4DX. Telephone: 081 309 1111; Fax: 081 309 0017
Expressworks Ltd; Vyne Cottage, 75 Heath lane, Upper Hale, Farnham, Surrey, GU9 0PX. Telephone: 0252 22446; Fax: 0252 24140.
GFA Data Media Ltd; Box 121, Wokingham, Berkshire, RG11 1FA. Telephone: 0734 794941; Fax: 0734 89461.

DynaCADD V2 Upgraded Again!



Two new utilities are now also available. CVG_DEF.TTP replaces the old CVG_DEF.TOS (necessary because CVG_DEF.TOS looked for the old cartridge protection). 150_200.PRG is a utility to convert existing .PRTs and .Figs to V2 format, removing one of my objections to returning the old cartridge. Neither utility bothers looking for protection.

The opening dialog from V2.00.06 includes a new option to force DynaCADD to use either the VDI or Line A graphics drawing routines provided by TOS. In my test the VDI routines were around 30% slower than Line A routines for screen regeneration. The option has probably been provided to improve compatibility with software/hardware accelerators and graphic cards. The MGE II documentation specifically recommends that programmers avoid using line A routines. I will use the slower VDI routines with NVDI. (See Show report and Issue 10.) The end result is comparable screen output speed compared to the Line A option but with faster dialog boxes and drop downs menus

Classified Adverts

Classified adverts are free to subscribers.

Please use the form on page 58.

For Sale

ST software, all with original packing and documentation – Timeworks Partner (multi-function accessory) £15, Data Manager Professional £20, First Word Plus with First Mail £20, Microdeal Back Up £5, Michtron M-Cache £5, Typhoon Thompson £5, Mercenary Compendium (with Unopened Targ Survival Kit!) £8, SubLogic JET £8, Miracle WS4000 Modem £50, Various ST Mags – offers? Phone Mike 0332-810785. (12)

Atari 520STM With AT-Speed, 2.5Mb RAM, Tos 1.41, 2 1Meg Floppy Drives, £400. Atari SC 1224 Colour Monitor £125, Script £50, Timeworks DTP £25, Fontkit Plus 2 £12, That's Write V1.38 £25, Hundreds of PDs – Doug Hamilton 0494 715754. (12)

STAR LC10C. Boxed as new – £120. Silver Reed Exp 400 Daisywheel Printer plus Spare Ribbons – £60. 16 x 256 Kb Dram from Frontier Board – £10. (0428) 658173 (Surrey). (12)

IBM AT 286, 640K RAM, 360K and 1.2M floppies, serial and parallel ports, network card, colour monitor, DOS, only £450 (Cheaper and better than Supercharger!). Call Marcus on 081 852 6662. (12)

The ST Disk Mag "ST News" is alive and kicking! Send disk + 2 international-reply coupons to "ST News", Looplantsoen 50, NL-3523 6V, Utrecht, Netherlands, to get the Lustrum Ish for Free! Send 3 disks plus 5 IRC's and you'll get even more! (12)

Atari SLM804 Laser Printer. For quick sale – £475 ono. Telephone Phil on Rotherham (0709) 878 095, any day 10.00 – 21.00. (13)

Atari 1040STE, 8 months old, boxed as new. External drive (1 meg), Monitor, Stereo Amp/Speakers, Blitz Turbo backup device, 1 Megabyte SIMM RAM, 600 disks full of utilities, art, music, games, PD, word processors, DTP and more. Magazines, Joystick and mouse. £650 ono or split. Call 0480-406415 6-8 pm. (12)

Megafile 30 Hard Disk Drive £195 o.n.o. Tel 0222-611463. (12)

Spectre GCR V3. Ready to go with system 6.0.5, 10 discs of PD and 5 Mac user magazines. £340 ono. Also Lattice C V5.0 £70. Phone 0761 472066 Evenings.. (12)

Atari SM125 mono monitor with swivel'n'tilt base £50, Phillips CM 8833 colour monitor £150, NEC Pinwriter P2200 24-pin (360x360 dpi) printer £150, 3.5" DS external drive with PSU £40. Bob, Witney 0993-704776. (13)

Games: Midwinter, F-16 Combat Pilot, Torvak the Warrior, Operation Thunderbolt – £10 each or all 4 for £37. Tanglewood, Silent Service, Blinky's Scary School, Treasure Island Dizzy £3 each or all 4 for £11. All original and boxed. Phone: 0246 201263 and ask for Steve. (14)

GFA Basic System 2, £10.00, Mint condition. Phone:- Evenings 0292 78220. (12)

RAM Upgrade for sale, 1/2 meg, Surface Mount Adaptor, Sealed in packaging, Cost £90, offers to Steven Edgar, Falla Brae House, Eshiels, Peebles, EH45 8NA. (13)

K-Spread 2 Spreadsheet £20, Easycalc Spreadsheet £10, Home Publisher – Basic Desktop Publishing Package £15. Tel: 0308 (Bridport) 24072. (12)

Hawk Calibri Hand Scanner with Scansoft V2.66 and HJB Paint Plus. Excellent Condition. Fully boxed with manual. Original cost £450. A steal at £150. Brilliant results with ST systems. Not recommended for STE's. If interested ring (0865) 247585 and ask for Dennis, or write to:- D.L. Douglas, 6 Aston Street, Oxford, OX4 1EP. (12)

Original Software with Manuals etc. Little used. Prospero ProFortran £35, Sage Bookkeeper £35, Fast Basic Rom Cartridge £25, Robtek Clock Cartridge £10, Signa Script £35, Campus Draft £30, PC Ditto £25, Laser Base £10, Cornerman £10, K Graph £15, Sharemaster £35, Stuff Utilities £5, Neodesk 2 £15. Also various PD and Surplus games, plus vintage TR5 80 Model 1, Twin Drives & Loads of Software (offers?). Telephone: 081 997 2572. (12)

Amstrad DMP 4000 9 pin dot matrix printer – Epson compatible – NLQ and proportional spacing – tractor/friction feed – takes up to 16.5" paper – Complete with manual and cable – £80.

Authorware

Every issue of ST Applications will feature advertisements and notices about products that are published by their authors. With the depressed state of the market for non-games ST software, many products that deserve to be published are not being taken up by publishing houses. Special-interest software, in particular, is very difficult to place with a suitable publisher. Self-publishing of software is only viable when there is a cost-effective advertising medium, or an active and responsive market for Shareware.

To get the ball rolling, there will be no charge for Authorware advertisements in the next few issues of ST Applications. In future issues all Authorware products will be given a free 20-word listing, and display advertisements will be available at a preferential rate. The only requirements are that the product should be of a suitable quality, ST Applications are given a review copy of the software, and the publisher/author should not be VAT registered.

Authorware is envisaged as a complimentary system to Shareware; Authorware entries and advertisements are an effective way of keeping users up to date on the features in the "registered users only" versions of Shareware packages.

If you would like to see your software featured in the ST Applications Authorware column please send us a review copy of the software and a rough outline of the advertising copy you would like to be printed.

SynTax

The ST adventure magazine on disk! Reviews, solutions, hints, special features and much, much more. Runs in colour only. Produced bi-monthly. **SynTax** costs £3.50 an issue, £20 for a year's subscription in the U.K./ Europe. Outside Europe, by airmail it costs £5.25/£30. Cheques made payable to S. Medley should be sent to:

9 Warwick Road, Sidcup, Kent DA14 6LJ.

Clip Art

specifically for

Christian and Community Magazines

Seven disks of IMG images for DTP programs supplied with a printed picture catalogue of every image. Cost: £3 per disk plus P & P: total of £23 per set. Cheques payable to:

Peter Kempley, KemCom Designs, 21 Chart House Road, Ash Vale, Aldershot, Hants. GU12 5LS.

Genealogy

My genealogy program runs on any ST(E). SAE for details or £17 for program: E.G. Richards, 2 Peckarmans Wood, London SE26 6RX.

STEN

ST ENthusiasts disk magazine - for your copy send a disk + SAE to:

Dave Mooney, 14 School Road, Morningside, Newmains, Lanarkshire.

Educational Adventures

for ages 5-13. 88% in ST Format. £12.00 each. 50p/disk for demos. C.V.S. 18 Nelson Close, Teignmouth, TQ13 9NH.

Tel: 0626 779695.

Contact Andy on (0245) 352556. (14)

NEC P2200 24pin printer, inc. cut-sheet feeder and new print head - £170. Software: Protext 4.2 £40, Prodata 1.1 (for ST) £30, HiSoft Basic 1.2 £40, Timeworks Data Manager £10, Timeworks Swift Calc £10, K-Occam + 2 Occam text books £40. All with manuals. S A Richards. Tel 0274-567 094. (13)

Brother HT15 Daisywheel Printer. Includes Sheetfeeder, 3 new ribbons and Parallel Cable. Excellent Print Quality £70. Tel: 0255-473135 After 7pm. Buyer Collects. (12)

Games galore for your ST £5 each. All originals. Call Sean on 081-748-5435 after 6.30 pm. (12)

Signum 2 Document Processor £60.00. WordUp £25. Microsoft Write £25. That's Write £40. Protext V.5 £40. Edgar Howard - phone: 0905 (Worcester) 830597. All items plus postage at cost. (12)

For Sale or Swap: Shirley Bassey Original Gold Disk - will swap for Atari ST Hard Drive or 9600 (or faster) Modem or offers. Please phone (0533) 823089 7pm to 10pm only. (12)

Atari 1040 STE 1? years old. Upgraded to 4 Meg. SM124 Mono Monitor, Timeworks DTP, First Word Plus, K-Spread, Superbase Personal, Word-Up, Fontkit Plus, ST Basic, Hyperpaint, Hyperdraw. Art Director. £600 ono. Les Wilson. 33 Dooley Road, Halstead, Essex. CO9 1JW (0787) 476733. (12).

Miracle WS4000 Modem with ST Lead, £50. Back Issues of ST World/ST User/Page 6 - offers? Turbodizer Video Digitiser £40. Software - Timeworks Partner £15, Data Manager Professional £20. First Word Plus (with First Mail) £20. Microdeal Back Up £5. Michtron M-Cache £5. Plus assorted games. Phone Mike on 0332-810785. (Derby area) (12).

Signum 2 Document Processor with Deskjet/Laser Printer Driver, SDO Graph (Signum to Graphics Convertor), Page Preview and extra fonts. £110. Phone: John Collier - 0923 266636 (Evenings only) (14).

GEC Datachat Modem. 1200/75 Baud plus Rubyview Software. £50.00. Ring Mel 0903 32065 After 6pm. (13).

Atari STFM -2.5 Meg, SM124 Mono Monitor + Quality Monitor Stand, also Superbase Personal, Timeworks DTP. £300. Contact Rob (0442) 216469. (13).

Original ST Software to clear: Harlekin £15, Microdeal Rom Clock £10, P.F.M. £10, Vidi ST V1.2 £15, Snooker £5, Psion Chess £10, K-Roget £15, FS11 £10, K-Data £15, K-Minstrel £5, K-Comms £10, Mini Office SpreadSheet £5, Mini Office Graphics £5, Degas Elite £5, Trip-a-Tron £8, Utility Plus £8, E-Type £5, Elite £5, Falcon F16 £8, Mavis Beacon Typing £8, Star Glider 11 £8, Phone 081 8511615. All Software £1. p/p. (12).

520 STFM Upgraded to 1 Meg Ram 2 +1 Meg DD in Tower System Case. Seperate Keyboard. Forget me Clock 2. Phillips CM 8852 Colour Monitor. Loads of original software, 1st Word Plus, Quantum Paint, TCB Tracker and many games. £400. ono. Phil Davies 0482 (Hull) 797341. HU8 9LQ. (14)

Wanted

Infocom's "Nord and Bert..." will pay £5 call Marcus on 081 852 6662. (12)

Fast Basic disk wanted to replace broken cartridge version. Norman Wilkinson, Vardeveien 52, 3290 Stavern, Norway. (12)

Help! Can anyone please help me translate a printed German manual? - Willing to swap PD etc in exchange. Please write to: Keith, 7 Pool Road, Leicester LE3 9GH, England. or phone (0533 823089) 7pm to 10pm. (15)

Retouche and Retouche Professional Software wanted. English or French version only. Write to Franco Turra - Via Castiglione 91-40136 Bologna - Italy or Phone (+51) 6484641 (Ask for Franco) (14)

Canon Bubblejet (BJ10e) Cartridges wanted. Any quantity. If you've got any to sell (or give away!) Give Jon a ring on 0785-46783 (Please leave a message if I'm not in.) (14)

General

Video Artist requires control of VTR using Atari RS232 port to Sony RS422 Protocol. Please Phone 071 708 2012 (Peter) for discussion. (12)

Treknet - The club for all fans of Star-trek. Regular meetings and a Great quarterly Newsletter. Produced on an ST. For details contact:- Captain A. Jarrett, 46 Regis Crescent, Milton Regis, Sittingbourne, Kent. (0795) 471970. (14)

Crystal Tower BBS 01-886-2813 24hrs 300-2400 Baud (Towernet System) Atari ST, PC, Languages, Comms etc + much more. All callers welcome. (R)

Guide Dogs for the Blind Appeal - Please send used postage stamps to help this worthy cause to: 19 Dunloy Gardens, Newton Abbey, Co. Antrim, BT37 9HZ. (R)

STARGATE BBS: 0476-74616 V21 V22 V22BIS V23 Atari ST section; also PC, Amiga and Comms areas. Comms help and advice for ST and PC via ST Editor. Give it a call and leave a message. If you need comms software get Uniterm from the ST Club. (R)

Professional typeset from 1st Word disks. Over 100 Faces. Output to high quality PMT. Much better than laser. Also cheap printing A5/A4 single colour. Contact: AZTRAL Games, PO Box 8, Lowestoft, Suffolk, NR32 2AS. (R)

Arcade Fantasy BBS - 0533 376056 (300-2400)_ (8pm - 8am). Superb ST PD/Shareware Section as well as PC, Amstrad, Amiga File Areas - Also The Support BBS For All "Hitchhiker" Shareware Releases - Give us a call today - very friendly SYSOP - No Fees. (R)

Kitchen Dosign Program

by Lawrence Elliott

(High res. mono only)

Create Kitchen Plans and Elevation views to scale from a wide selectiion of Units and Appliances with worktops, pelmets, etc.

42 Gwaun Coed, Brackla, Bridgend, Mid Glamorgan CF31 2HS.

MORSE MASTER v1.0

for ATARI 520/1040/STE

THE complete morse trainer/simulator, with realistic 'on air' emulator and integral editor. The emulator allows complete control of your listening environment. Volume, Frequency, Drift, Noise and adjacent RTTY channel volumes can be tailored to suit your listening needs.

In addition to sending, your Atari can also receive and decode morse from your own key, using the supplied interface cable. Usable by novices and professional radio operators alike, this product has got to be one of the best simulators around!

Send cheque or P.O. for £29.99 payable to Boscad Ltd. at

16 Aytoun Grove, Balbridgeburn, Dunfermline, Fife KY12 9TA. Telephone 0383 729584 ***evenings*** for technical information.

BOSCAD Ltd.

→ Calamus Manual ←

This self-tutorial guide incorporating sections on frame drawing, entering text. changing fonts and styles, importing text and images, drawing boxes and lines, loading, saving, printing, text rulers, headers and footers and page numbering.

It is available at £5 (including postage) from:

David Waller, The Sandon School, Molram's Lane, Great Baddow, Chelmsford, Essex, CM2 7AQ..

Cheques should be made out to 'Sandon School'.

RAE Morse Test

Selectable letter/number groups, thinking time, note pitch, morse generation from keyboard for CQ; plus save to disk, etc. Instruction manual and disk for £7 or SAE for more details.

R L Tuft, 62 Admirals Court, Thirsk, North Yorks. YO7 1RR.

Telephone: 0845-525082

"SONIX"

Atari ST/E Sound Sampling Service

We will sample your sounds from tape on to disk. Ideal for demos, games and your own programs.

3 day turnaround guaranteed. Write for FREE details to:

The Lodge, Delly End, Hailey, Witney, Oxon OX8 5XD.

Back Issues

ST Applications back issues cost £2.00 each

ST Applications Issue 1

Reviews: NeoDesk3, Universal Item Selector III, Deluxe Paint ST, Easy Draw 3, Tristan, PD Adventure Games: Invasion and Darkness is Forever; Jeremiah's Journal: Adventure Probe Convention, Operation Stealth, Tamoret; Book Reviews: C: A Dabhand Guide, The Oxford Dictionary of Computing; Articles: Computer Entertainment Show '90, MIDI Hands on Show, MIDI in the UK, Fontkit Plus Tutorial V, That's Write, Hard Disk Backup, Searching Directory Trees, MIDI Software in C, Reading CP/M disks; Gadgets by Small; Regulars: PD Update 11.1, Forum, CAD Column, STicks and STones.

ST Applications Issue 2

Reviews: NeoDesk CLI, Le Rédacteur v3.03, Megapaint II, Protext v5, Jet Setters (Inkjet printer), Dr. T.'s Tiger Cub, Headstart; Articles: Whistle Stop Tour, Fleet Street Publisher 3 or Timeworks?, TeX Notes, Fontkit Plus Tutorial VI, ST Parallel Port Buffer, MIDI Software in C; Regulars: PD Update 11.2, CAD Column, GFA Problem Page, Programmers' Forum, Adventure Column, Forum, STicks and STones.

ST Applications Issue 3

Reviews: Wordflair, Molgraph, Write ON, EdScheme; Articles: Computer Shopper Show, Living with the Atari Laser, Working in Tandem (ST & HP DeskJet), LaserFace, On-Line Conferencing (CIX), Racing Spreadsheets, Giving it the WERCS (1), Dan Wilga Interview; Regulars: News, Forum, Adventure Column, CAD Column, PD Update 11.3, STicks and STones, Programmers' Forum.

ST Applications Issue 4

Reviews: Harlekin, CADja, Calligrapher, Titan Designs' Reflex Board; Articles: 16-bit Computer Fair Reports, Pictures Scanners and Pixels, Your FirST BASIC, ST Internals, DIY Fan Thermostat, Fontswitch 3, Giving it the WERCS (2), GEM Dialogue boxes in C; Regulars: News, Forum, Adventure Column, CAD Column, STicks and STones, PD Update 11.4, Programmers' Forum.

ST Applications Issue 5

Reviews: Keys!, Craft 2, ISETL, AdSpeed, Personal Finance Manager Plus, Master Time, Game Makers' Manual, FastCopy 3; Articles: FastFire, Bertha (DIY Upgrade), MIDI Fundamentals Pt1, Auto-Run, Software Documentation, Fontswitch Pt 2, Tempus Pt 1; Regulars: News, ST Internals, STicks and STones, Adventure Column, Forum, GFA Problem Page, Programmers' Forum, WERCS Pt 3, CAD Column.

ST Applications Issue 6

Reviews: Playback, Quartet, Opus 2.2, Auto-Switch Overscan, In The Public Domain; Articles: Atari Press Conference, ST in the Office, Scanning New Horizons, Switch-On Delay Unit, Tempus Pt 2, Giving it the WERCS Pt 4; Regulars: News, STicks and STones, MIDI Fundamentals, PD Update 11.5, Adventure Column, CAD Column, Forum, Programmers' Forum.

ST Applications Issue 7

Reviews: MasterSound 2, Introducing Atari ST Machine Code, Retouche, DeskJet Refills, Migraph Scanner and Touch-Up, In the Public Domain; Articles: TeX First Aid, More Upgrades, MIDI Fundamentals, STE Programming; Regulars: ST Internals, PD Update 11.6, Adventure Column, Desktop Discussions, GFA Problem Page, STicks and STones, Forum, Programmers' Forum, CAD Column.

ST Applications Issue 8

Reviews: That's Write, Minix 1.5, HyperDraw, VidiChrome, G+Plus 1.5, Head to Head; Articles: The ST in Education, Getting to Grips with Cubase Pt. 1, STE or Mac Classic?, STE Programming; Regulars: ST Internals, PD Update 11.7, Adventure Column, STicks & STones, Desktop Discussions, Forum, CAD Column, Programmers' Forum.

ST Applications Issue 9

Reviews: Replay 8, Knife ST, Go, Professional Virus Killer 2, SuperBoot v XBoot, Bible Concordance, Master CAD, Xtra RAM ST+2, The Blag; Articles: High Density Floppies, ST Internals, Cubase Part 2, In the Public Domain; Regulars: News, PD Update, STicks and STones, Adventure Column, Desktop Discussions, Forum, Programmers' Forum, CAD Column, A-Z of the ST, Classified Adverts.

ST Applications Issue 10

Reviews: HyperChart, Knife ST - Ultimate Disk Editor?, CodeKeys, Cold Hard Cache, PC Speed, Fractal Music, Public Domain Software; Articles: Racing Spreadsheet - Is it a Winner?, ST Internals, Getting to Grips with Cubase Part 3, From the Hotline, File Selector, Traps for the Wary Part 1; Regulars: News, PD Update, Jeremiah's Journal, The A-Z of the ST (C-D), STicks and STones, Forum, Desktop Discussions, Programmers' Forum, CAD Column, Classified Adverts.

ST Applications Issue 11

Reviews: PageStream 2.1, Didot lineArt, Mortimer, Harlekin 2, PD Software, Adimens Database; Articles: Pilgrimage to Düsseldorf, Harnessing Harlekin, ST Internals, Getting to Grips with Cubase Part 4, From the Hotline, Traps for the Wary Part 2; Regulars: News, PD Update, Jeremiah's Journal, The A-Z of the ST (E), STicks and STones, Forum, Desktop Discussions, Programmers' Forum, CAD Column, Classified Adverts.

Subscription Notes

Subscription Expired?

Check your address label to see when your subscription expires: the first number above your name is the issue of ST Applications that your subscription will expire with, and the second number is the number of the disk mag that your Disk Mag subscription will expire with.

Example: STA12 - DMG-

In this case: the ST Applications subscription will expire with issue 12 and there is no Disk Mag subscription.

Subscriptions

A 12-issue subscription costs just £15.00; Twelve issues would cost £18.00 if bought individually. Taking out a subscription saves you £3.00 (the cost of two issues), and you get guaranteed delivery direct to your door with no delivery charges.

You can also subscribe to ST Applications and The ST Club Disk Mag. These are bi-monthly compilations of the best PD software to come to our attention in the preceding couple of months - not magazines on disk. A subscription to ST Applications magazine plus the six Disk Mags costs just £22.50. To buy all six disks individually would cost £15.00: subscribers get a massive 50% saving off the cost of the disks!

For details on back-issues of the ST Club Disk Mag see the PD Catalogue Version 11 and subsequent updates.

Subscription Rates

United Kingdom

12-issue subscription to ST Applications: £15.00

12-issues plus 6 Disk-Mags: £22.50

Air Mail to Europe

12-issue Subscription to ST Applications: £18.00

12-issues plus 6 Disk-Mags: £26.50

Air Mail Worldwide

12-issue Subscription to ST Applications: £28.00

12-issues plus 6 Disk-Mags: £34.50

A Subscription and Order form is on page 57

ORDER FORM

• Commercial Software •
• Books • Accessories •
• Disks and Boxes •

Qty	Title	Price	
	ST Applications Subscription (£15)		
	ST Applications + DIsk Mags (£22.50)		
	Overseas Subscription		
	Universal Item Selector III - £19.95		
	UIS III v3.0 to v3.3 Upgrade (£3.50)		
	Fontkit Plus 3.4 - £19.95		
	Fontkit Plus Upgrade Code:__		
	Molgraph v2 (£18.95)		
	Molgraph v1 to v2 (£6.95)		
	Fontpac Plus - code:___ (£6.95/£9.95)		
	The Astronomy Lab £19.95		
	A Users' Guide to DTP - £9.95		
	A Users' Guide to 1st Word - £6.95		
	Clip Art Catalogue (£2)		
	Disk Boxes for 12 disks (£1.40 each)		
	Branded D/S Disks: 10 @ £12.95		
	Un-Branded Double Sided Disks		
	Disk Labels @ 1.5p each		
	Sub Total A = £		

Public Domain Disks

	Code (AAA NN)	Title / Description
1		
2		
3		
4		
*	FREE	PACK OF DISK LABELS
5		
6		
7		
8		
9		
10		
*	FREE	SLIMPACK DISK BOX
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		

Name: _____

Address: _____

_____

_____

Post Code: _____
(This is essential)

STA12

Cheques and Postal Orders should be crossed and made payable to: **SIMPLE LOGIC & Co.** You may pay by Transcash at The Post Office or by Giro Bank Transfer to our Account Number: 37•820•7806
Overseas orders are welcome. There are no postal surcharges on disk orders from within Europe; other countries please see Air Mail prices in our catalogue.

PD disk prices

	up to 6	7+ disks
Non subscribers	£2.80	£2.50
Newsletter Subscribers	£2.50	£2.25
Disk Mag Subscribers	£2.35	£2.05

Budgie UK disks are licenseware - not PD - and cost £2.95 or £3.95 ea. - please use the left hand column to order these disks.

__ PD Disks @ £___ =		
Plus Sub total A =		
TOTAL ORDER VALUE		

Subscription to start with current issue / issue no. ...

All prices include VAT • Our VAT No: 432•2334•90

☐ Please tick here if you require a VAT Invoice

Easy Text Plus

A budget priced
Desktop Publishing Package

Imports First Word documents, allows use of GDOS fonts and imports clip art. Many different text effects and fill patterns are available. New version now includes improved GDOS support with greatly enhanced print quality.

Price: £20

Blank Disks

Sony Branded Double Sided
3.5" disks
Box of 10 - £12.95

High Quality Unbranded disks
(Kao or Sony) With disk labels
Each - £0.75
10 - £7.50
25 - £17.50

Classified Advertisement Copy

Please insert the following advert for ..... Issues under the following classification: / ST Contacts / For Sale / Wanted / General / User and Special Interest Groups.

Warning: It is illegal to sell unauthorised copies of commercial software - All software offered for sale must be in the original packaging with manuals etc. Anyone found to be selling pirated software through the classified advert listings will be reported to the appropiate authorities. Software Publishers do not normally offer user support or upgrades to users of software purchased second hand.

Molgraph 2

A Molecular Graphics Program for the Atari ST

A comprehensive package that will Display, Rotate and Scale molecular models. Vector, sphere, and two types of ballstick displays are supported.

Molgraphs powerful Build feature is an advanced and versatile method of combining together 3-dimensional fragments of molecules to build new molecular structures.

Molgraphs displays may be printed directly from within Molgraph or saved to disk for use in a wordprocessor or DTP package. Frames may also be saved for use in Molgraphs Movie feature which presents short movie sequences showing molecular rotation. Data is saved in the standard PDB (Brookhaven Protein Data Bank) format.

Molgraph is fully GEM driven making use of drop down menus and instruction boxes to guide the user through the program operations. Runs in high resolution monochrome or low resolution colour. Supplied with a full printed User Manual. Price: £18.95

The Astronomy Lab

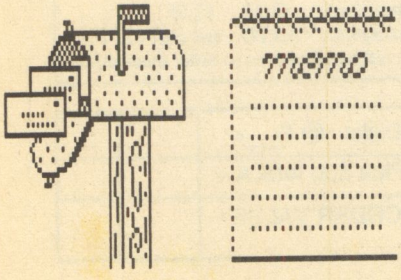
Written by Eric Bergman-Terrell and published in the USA by Personal MicroCosms, this package has already established itself as the most versatile and comprehensive astronomy package for the Atari ST.

The Astronomy Lab will generate: animated displays simulating a host of astronomical events; charts that illustrate many important concepts of astronomy; and reports that contain predictions of the most important astronomical events. All are customized to the users location and time zone.

The novice can use The Astronomy Lab as an excellent educational tool, while seasoned astronomers can make the very best use of their observing time. The Astronomy lab will run on any 520ST, 1040ST or Mega ST in either mono or colour.

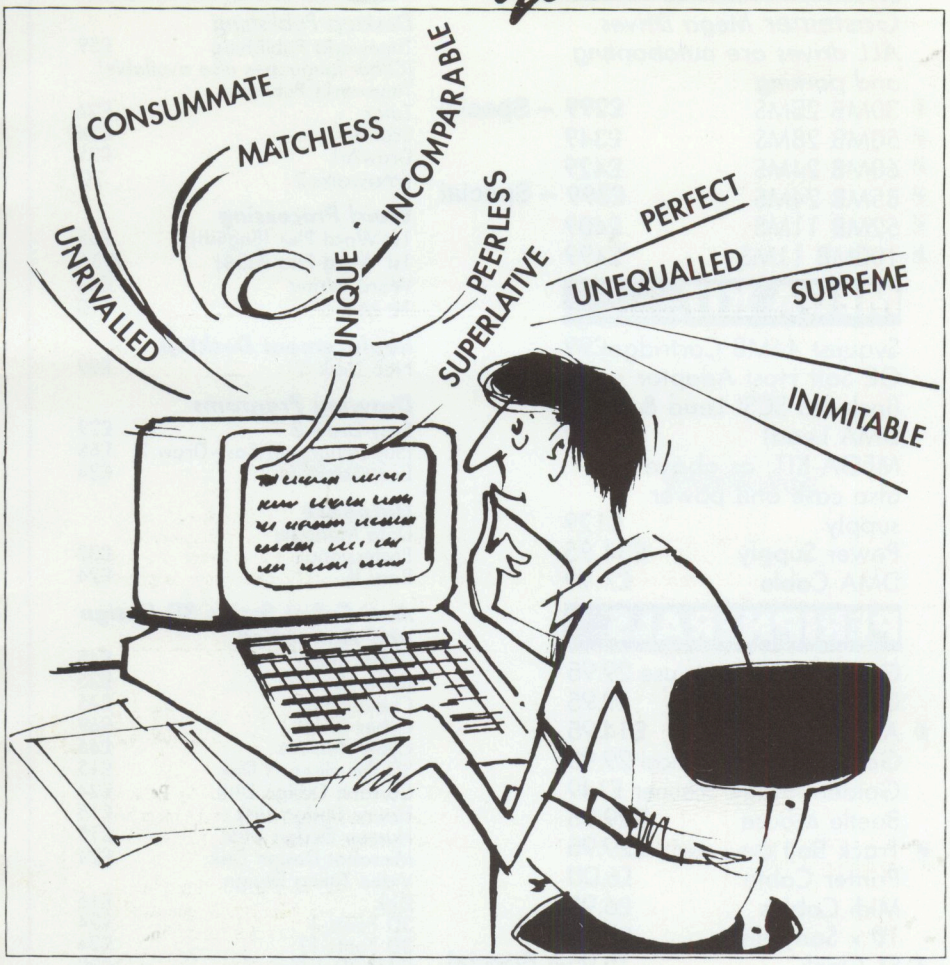
The manual now runs to over 110 A4 pages and includes a tutorial, plus some excellent educational information about basic astronomical terms, a glossary, suggested activities, and recommended reading on various astronomical topics. Price: £19.95

Use this space for any feedback you'd like us to read.



PROTEXT 5.5

"You won't be lost for words" . . .



. . . with Protext 5.5 because the pop-up thesaurus will provide you with inspiration whenever you need it. With words provided by Collins the thesaurus has 43,000 main entries and 827,000 responses!

Protext 5.5 introduces enhanced text formatting options. Automatic hyphenation lets you produce a well-spaced page layout without the bother of manually putting in soft hyphens. Protext determines the correct hyphenation points by algorithms and look-up tables. Elimination of widows and orphans is also provided. You will no longer need to worry about those infuriating single lines at the top or bottom of pages. Protext formats the text to avoid these as you edit the text. Extra blank lines at the top of a page can be suppressed.

New document analysis features provide a wealth of information about your text. You can examine a list of all the words used - alphabetically or by the number of occurrences. Other statistics shown include average word length, average sentence length and a table of the number of lines on each page.

Plus many more improvements . . .

- Enhanced file selector with different sorting methods, bulk copy and erase.
- Prodata users - mail merge directly from Prodata files, no need to export.
- Mail merge: nested repeat loops.
- New window-based help facilities.
- Improved line drawing.
- Spelling checker finds repeated word and missing capital letters.
- Conversion to and from WordStar 5.5 and Microsoft RTF
- Full printed documentation of new features.

Of course Protext still includes . . .

Choice of pull-down menu or keyboard operation, extensive printer font support and proportional formatting while editing, up to 36 files open, split screen editing, characters for 30 languages, index and contents, footnotes, newspaper column printing, file sorting, macros, indent tabs, mail merge programming language, exec files and the fastest search and replace around. Altogether the most comprehensive word processing software for your Amiga or ST.

"it's bloody brilliant" — **ST FORMAT**

"one hell of a performer" — **COMPUTER SHOPPER**

"if you need a professional word processor Protext is perfect" — **AMIGA COMPUTING**

"nothing else available comes close" — **ST APPLICATIONS**

PRODATA 1.2

New version of Prodata now with pull-down menus, mouse or keyboard operation, automatic record numbering, merge database, instantaneous filtering, prologue form, edit fields in any order, 2-across label printing. Full details available from Arnor.

Price: £85+VAT, upgrade from v1.1 £30+VAT.

PRICES (including VAT and delivery)

For Commodore Amiga, Atari ST or TT.

Protext 5.5	**£152.75**
Upgrade from 5.0 to 5.5	**£30**
Upgrade from 4.2/4.3 to 5.5	**£60**

Please return your original disks when upgrading

French or German spelling dictionary	**£35.25**

When upgrading please return any extra spell checking dictionaries for a free update to the revised version.

☆ **Both Protext 5.5 and Prodata require 1Mb of memory**

Access VISA

ARNOR

Arnor Ltd (STA), 611 Lincoln Road, Peterborough PE1 3HA. Tel: (0733) 68909 Fax (0733) 67299

GASTEINER Technologies

TEL: +44 081 365 1151
FAX: +44 081 885 1953
Millmead Business Centre, Mill Mead Rd, Tottenham N17 9QU

COMPUTERS

ATARI

520 STFM	POA
520 STE Discovery Plus	POA
520 STE 1MB	POA
520 STE 2MB	POA
520 STE 4MB	POA
1040 STE 1MB	POA
1040 STE 2MB	POA
1040 STE 4MB	POA
MEGA STE	POA
TT	POA

MONITORS

Philips 8833 II	£229
Atari SM124	POA
Atari SC1224	POA

PRO MONITORS

NEC 3D	£499
Quadram 1480	£399

Free Gastiner Switch box with Audio Out

PRINTERS

PANASONIC

KXP-1081	£155
KXP-1180	£159
KXP-1123	£209
KXP-1124i	£269

STAR

LC-20	£169
LC24-200 (Col)	£299
LC24-200 (Mono)	£269
Canon BJ10	£249

LASER

Panasonic KXP 4420	POA
Atari SLM 605	POA
HP Laserset IIIP	POA
NEC 560P (Postscript)	POA

= Two Year Warranty

MEGA DRIVES

Gasteiner Mega Drives
ALL drives are autobooting and parking

30MB 28MS	£299 -- Special
50MB 28MS	£349
60MB 24MS	£429
85MB 24MS	£399 -- Special
52MB 11MS	£409
100MB 11MS	£499

MEGA KIT

Syquest 44MB Cartridge	£99
GE Soft Host Adaptor (includes SCSI Lead & DMA Lead)	£59
MEGA KIT, as above but also case and power supply	£129
Power Supply	£34.95
DMA Cable	£7.99

PERIPHERALS

Golden Image Mouse	29.95
Gasteiner Mouse	19.95
Alfa Data Mouse	£14.95
Golden Image Optical	29.95
Golden Image Scanner	£149
Beetle Mouse	£29.95
Track Ball (Click + Hold)	£29.95
Printer Cable	£6.00
Midi Cables	£6.95
10 x Sony discs	£7.95
ST Clock	18.95 -- Special

MEMORY

Gasteiner 2.5MB for ST	
STFM + MEGA 2	99 -- Special
Power Supply (Exch.)	29
Power Supply	49
UnPop Board (½+2MB)	£29
STE ½MB	£25
2MB	£89
4MB	£169

SOFTWARE

Desktop Publishing

Timeworks Publishing	£59
(Other languages also available)	
Timeworks Publisher	
Tutor	£24
ScanArt	£34
DrawArt	£39
Timeworks 2	79

Word Processing

1st Word Plus (English)	£55
1st Word Plus (USA)	POA
Word Writer	£44
1st Mall	£10

Replacement Desktop

Neo Desk 3	£29

Drawing Programs

Easy-Draw 2	£29
(Supercharged) Easy-Draw 2	£65
Easy Tools	£34

Database

Data Manager Professional	£32
Base II	£24

Anti Cyber Series 3D Design and Animation

Cyber Studio	£45
Cyber Control	£35
Cyber Paint	£45
Cyber Script	£69
Cyber Texture	£45
3D Developer's Disk	£15
Cartoon Design Disk	£24
Future Design Disk	£15
Human Design Disk	£15
Microbot Design Disk	£24
Video Titling Design Disk	£15
3D Fonts 1	£24
3D Fonts 11	£24
CAD 3D 1.0	£20
Plotter & Printer Drives	£20
GIST	£15
Genesis	£34
Spectrum 512	£24

Languages

Mark Williams C	£49
CSD for the Atari ST	£49
GST Macro Assembler	£15
Fractal Generator	£15
GSTC	£15
Prospero C Comiler	£89
Prospero Fortran	£89
Prospero Pascal	£89

Stand-Alone Programs

COLR Object Editor	POA
Crystal	POA
Maps & Ledgends	POA
Datamap Collection 1	POA
Datamap Collection 2	POA
Expert Opinion	POA
Flash	POA
Kermit & Remote	POA
Navigator	POA
PIE	POA
Quicktran	POA
START	£6.95
Partner ST	£35

ATARI ST SOFTWARE

ACCOUNTS

Sage Cash Trader	£76
Small Business	£55
Sage Fin Controller	£379

DATA BASES

Superbase personal 2	£59
Superbase pro	£169
Prodata	£55

DTP

Fleet St Pub	£159
Calamus	POA
Calligrapher pro	POA
Page Stream	£129
Funface Identikit	29

MISCELLANEOUS

Delux Paint	£49	PC Speed	£29
Hyper Paint	£24	AT-Once	£149

MUSIC

C-LAB Notator	POA
C-LAB Creator	POA
Cubase	POA
Cubeat	POA

WORD PROCESSORS

That's Write	£29 -- Special
Write On	£45
Protext	£109
Calligrapher Junior	69

SPREAD SHEETS

K-Spread	POA
Logistix	£79
LDW	£89

--Xtra Special

Valuetime Budget Range

Let's Make Calendars & Stationery	£8
Let's Make Greeting Cards	£8
Let's Make Signs & Banners	£8

Opening Hours Mon-Fri 9.30am-5.30pm
Sat 9.30am-2.00pm

Credit Cards Welcome Personal Callers Welcome
Trade + Educational Orders Welcome
All prices correct at time of going to press